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Clinical Notes

HENRY KELLER, M.D.

ATTENDING ORTHOPEDIC SURGEON NEUROLOGICAL, COMMUNITY AND WEST SIDE HOSPITALS, NEW YORK CITY.
New York, N. Y.

From Dr. Keller's Orthopedic Clinic

Mrs. G. R., 64 years old, Russia, married, two children, two years in U. S.

Family History: Father died of old age. Mother suffered from a paralytic stroke.

Personal History: Denies venereal infection.

Habits: Moderate coffee drinker, no alcoholic stimulants. Menstruation ceased years ago.

Previous Illness: Had Grippe about six months ago, which laid patient up in bed for a week, accompanied by fever and great prostration, requiring the services of a physician.

Soon after (one month after) the patient began to suffer from pains on the sides—lower dorsal and lumbar.

The pains keep increasing in severity and intensity, and the only time the patient gets a little relief is when she rubs or massages her spine. She complains of severe lancinating pains shooting down the back and radiating to the sides, day and night. Also claims to have lost about 28 lbs. in weight, in the last few months.

Examination: Patient brought into the office leaning on the arms of the husband and son. Walks hesitatingly and with a good deal of effort. The back is bent with a slight kyphosis visible, in the region of the ninth dorsal.

The patient's lower abdomen is supported by an abdominal belt, applied in accordance with the direction of the attending physician, the belt reaching the first lumbar posteriorly while the kyphosis is visible on the ninth dorsal.

The skin of the body seems somewhat loose, which

corroborates her statement of rapid loss of weight.

Patient cannot lie on her back without screaming with pains.

Patient holds herself in kyphosis even when on her back.

Examination of heart and lungs shows that they are normal. Pelvic organs are normal for the age.

Knee reflexes somewhat exaggerated but no paraplegia present.

Patient was then referred to the Community Hospital, for further examination.

On 7-8-'29, blood count and blood chemistry as well as urinalysis and X-rays were taken at the hospital.

Results:

Blood Count:

Erythrocytes ..3,900,000	Large mononuclear.. 8%
Leucocytes 8,200	Transitional 1%
Small lymphocytes ..27%	Polynuclear
Large lymphocytes..10%	neutrophiles59%

Blood Chemistry:

Normal		Normal	
Urea 19.4 mg.	12-18	Uric acid 3.3 mg..	3-0
Creatinin 1.0 mg. .	1-3	Blood sugar	
		89.2 mg.	80-120

Dr. Chlenoff

So practically there is nothing abnormal in the chemistry of the blood.

There seems to be a slight anemia as shown by the blood count.

Urine also shows no abnormality.

X-Rays—Two positions were taken: anterior-pos-

terior and lateral views of the entire spinal column. The anterior-posterior view was taken first and the roentgenologist's report was that there was no pathology visible in the X-ray. Upon my suggestion that the lateral view be taken, the pathology of the ninth and tenth dorsal became manifest—marked destructive condition of the two bodies.

Discussion—Age of patient 65, marked loss of weight, severe pains with rapid appearance of kyphosis.



Fig. 1.—G. R.—Malignant growth, 9th and 10th dorsal (marked by arrows).

Pains lancinating in character and not relieved by recumbency, all speak in favor of malignancy of the spinal column, while the condition coming on after grippe and the absence of primary carcinoma in every part of the body, as the uterus, the breast, etc., which usually serve as primary growth sources for metastasis in an osseous region, may mean a tuberculous involvement of the spinal column.

There are also other pathologic conditions to be considered, namely, cysts—benign growths.

In none of the above, however, will the pains be so severe, nor the loss of weight great.

In this case we therefore have to boil down our diagnosis to three possibilities.

Malignant Growths—Primary Sarcoma or secondary Carcinoma, or Pott's Disease of the Spine. The age of the patient lessens greatly the possibility of tuberculosis. Tuberculous invasion of the spine in the aged is not a very frequent occurrence, but it takes place in some cases, and its possibility should therefore be borne in mind. Thus Whitman gives the statistics of 1259 consecutive cases of Pott's disease from the Ruptured and Crippled Hospital, as to the ages of first onset. Out of these, the largest group was between three and five years of age—627 cases, but between the ages of 31 and above 50 years of age there were also 42 cases.*

*See Whitman, *Orthopedic Surgery*, 8th Edition, P. 21.

And one point more in cases of adult tuberculosis of the spine is the fact that the patients suffer greater pains than the children do, especially so when the lower part of the spine is involved.

On the other hand the patient feels somewhat relieved when in recumbent posture, the loss of weight is not so great nor so rapid, and there is usually a greater collapse of the involved bodies of the vertebrae in tuberculosis, while in tumors involving the spinal column the bodies of the vertebrae seem to be held up by the growth in its early period unless suppuration takes place.

In the case under discussion in spite of the enormous involvement of the ninth and tenth dorsal vertebrae there is very little collapse, and the ninth seems actually to be supported by something within the body which prevents it from collapsing. See Fig. 1.

In this case, therefore, I am inclined to the belief that it is a malignant growth, rather of the primary type of the endosteal variety. The latter usually begins in the cancellous tissue of the body of one of the vertebrae and spreads rapidly with ultimate grave prognosis of short duration.

In secondary carcinoma involving the region of the ninth dorsal the primary growth would usually have been in the breast region, and if not so localized there would be a greater dissemination, the porosis of the spinal column more diffused and more marked, and in



Fig. 2.—G. V.—Compression Fracture of Second lumbar (marked by arrows).

the many cases which I have seen the pains were not severe in character.

To recapitulate:

- (1) Severe pains radiating downward from the site of the lesion;
 - (2) Pains in the day time as well as at night, not relieved by recumbency;
 - (3) Rapid loss of weight, coming on after the age of 65, all speak in favor of malignant growth.
- A Point As To Treatment:* In the result of immobili-

zation of the spine, be it with a brace or plaster of paris, we have one more important diagnostic feature. While in Pott's disease of the spine, immobilization will be followed by cessation of pains, and the patient will immediately feel a relief and will show it by the disappearance of the anxiety visible on his face prior to the immobilization, in growths of the spine, however, such relief does not follow. On the contrary, the patient's spine, having been compressed, gives the patient

discuss today are a number of cases of fractures of the vertebrae which I have had occasion to see recently, and though the X-rays show marked injuries to the bodies of the vertebrae the symptoms and signs usually expected to be present in such cases were conspicuous by their absence.

Case 1—G. V., age 57 yrs., born in Italy, a plasterer by occupation, fell down from step ladder, injuring his back, three months ago. See Fig. 2.

Examination—Spine held somewhat stiffly, cannot stoop down freely without holding on to his knees for support. Has no nerve symptoms. Knee reflexes normal, no bladder nor rectal disturbances.

X-ray shows a marked diminution of the vertebral body of the second lumbar due to a compression fracture, and owing to the paucity of the symptoms present the hospital where he was taken for observation soon after the injury did not deem it necessary to take an X-ray and diagnosed the condition as a contusion of the back.

(2nd) Case—A. K., age 41, Russia, M., three children, moderate drinker, denies venereal infection. See Fig. 3.

Antecedent history, negative. In March of this year (1929) he fell off a scaffold injuring his back, was taken to the Port Chester Hospital, where he was kept for three weeks, and sent home strapped up in adhesive plaster.

Examination in my office, on June 4th, shows a stiff back with spasm of the muscles around the upper lumbar region, with a break in the continuity of the dorso-lumbar line by a slight knuckle.

X-ray shows fracture of body of first lumbar.

Again all the symptoms and signs which usually are expected to accompany such injuries were marked by their complete absence.

(3rd) Case—E. O., 25 years of age, single, born in Esthonia, denies venereal history. See Fig. 4.

Was well until May 1st, 1929, when a heavy iron pipe fell on his neck and head. Became unconscious for few minutes; cold applications to face brought him to. Was taken to Polyclinic Hospital where he remained for five days for observation. After the five days, he was sent home.

On May 19th was sent to my office, where on examination I found the head held stiff, the position of choice being the chin up and away from chest and the cervical spine in hyperextension. The cervical muscles on both sides were held in a protective attitude and the right arm adducted to the body and painful when abduction was attempted, though there was no paralysis of the arm, nor any neuritis. There was, however, a good deal of tenderness on the right lateral side at the region of the 5th and 6th cervical. He also complained of pains in the metatarso-phalangeal joint of right foot.

Examination—Except for slight irregularity of the pupils and weakness of the right arm there were no other nervous symptoms except pains radiating over head.

X-ray taken on May 24th, by Dr. Lewis, shows as follows:

A narrowing anteriorly of the body of the fifth cervical vertebra. A little anterior to this body there is seen a shadow of increased resistance, which is suggestive of some productive process and a previous trauma, with a fracture of the vertebra. In this connection, it is worth while mentioning that X-rays taken previously at another place were reported as negative in findings. (Such discrepancies are not infrequent in X-rays of the cervical region.)



Fig. 3.—A. K.—Compression Fracture of first lumbar (marked by arrows).

greater discomfort and hence this difference in the two conditions is of moment in the differential diagnosis.

I applied a jacket of plaster of paris on 7-12-'29, and am watching results.

Operative treatment in these cases is futile and should not be attempted.

We know of a few cases where fusion and grafting were done, mistakenly, because the diagnosis was not made of the true condition.

The lessons to be derived from this case:

1st. In order that a proper diagnosis be made in the diseases involving the spinal region, thorough inspection, palpation and percussion are necessary. In other words first make a tentative clinical diagnosis, and then read your X-ray plate.

2nd. For an X-ray plate to be of use in the interpretation of the pathologic condition it is necessary to take antero-posterior and lateral views as well, otherwise the finer points are usually missed and at times the report of the findings may be misleading.

X-ray Therapy—At the New York Cancer Institute, I have seen a number of cases with spinal involvement who are being treated with X-ray therapy, and according to my impression mighty few have responded favorably, but in view of the surely fatal termination without the treatment it is worth while to try even though a very small percentage profit thereby.

Fractures of the Spine:

(2) The second series of cases which I intend to

There is also a seemingly incomplete fracture of the fifth cervical on the right side.

A helmet worn for six weeks gave him complete relief, and an X-ray taken after removal of the helmet shows union of the broken parts. The pains in the neck have disappeared, and the right arm though much improved with physiotherapy is still somewhat painful; otherwise, he suffers from no untoward symptoms resulting from the severe injury.



Fig. 4.—E. O.—Fracture 5th cervical body.

Discussion—The importance which I attach to these cases is due to the fact that all three were taken to general hospitals soon after the injury and all the three were wrongly diagnosed because of the paucity of the symptoms and signs, and that, all the three, though the symptoms were meagre, the condition present could have been suspected had a thorough examination been made, because one had a knuckle in the region of the first lumbar with a break in the line of continuity of the dorsolumbar spine, another patient had a stiff back, with marked muscular spasm in the lumbar region, while E. O. displayed disturbance of the cervical sympathetic ganglia which usually accompanies injuries in that region, also the accompanying stiffness of the cervical muscles and pains and tenderness on motion of the head, and the painful right arm. These were certainly enough accompanying symptoms and signs to give a clue to the examining physician that the condition was more serious than a superficial examination would warrant, and early immobilizing treatment should have been instituted accordingly.

The reason for the neglect is the fact that most physicians are impressed with the fact that a fracture of the vertebral body is a very serious injury, and that such injury is usually accompanied by nerve symptoms, and therefore when such severe complications are not making their appearance the physician makes light of the condition. It is therefore in place here to quote Herndon, who made a study of 941 consecutive cases of back injuries in industrial employees, and found 498 cases of sprain with two-thirds of them in the

lumbosacral region. Fractures of the vertebra, processes occurred in 41 cases, while fracture of the vertebral bodies in this series occurred in thirty cases, equalling three per cent. Many of the latter followed what seemed to be slight accidents and were surprisingly devoid of symptoms.*

Clinical Conclusions

(1) There are many cases of fracture of the spine which do not give the symptoms and signs usually described in text books, and such possibility should always be borne in mind.

(2) Each case of fracture of the spine must be treated on its own merits as to the need of rest, immobilization by plaster, brace, frame, laminectomy, fusion or grafting operations.

(3) Roentgenologic aid is very important in the making of a proper diagnosis and should be utilized in every case of trauma involving the spinal column. Stereoscopic views are of particular importance, and in the upper cervical region an X-ray should be taken with the mouth wide open, in order to visualize the first three cervicals.

A Note as to Treatment—In fractures of the lumbar vertebrae with no pressure symptoms accompanying the condition, and with the presence of pains and stiffness of the spine as the only visible, reactive manifestations, also in view of fact that the erector spinae and the multifidus muscles are strong enough to maintain the lower part of the trunk and prevent its falling forward, I feel that a plaster jacket for three or four months followed by a plaster corset or a spinal brace for another two or three months should suffice, without any need of a stiffening operation of the lumbar vertebrae, which usually results in stiffening of the only freely movable portion of the spine. On the other hand, if such fracture were to take place in the ninth or tenth dorsal region, fusion operation or bone grafting would be the ultimate treatment of choice.

498 West End Avenue.

Treatment of Carbon Monoxide Poisoning

Experiments *in vitro* and on animals as well as clinical observations have convinced F. Koza of the value of ultra-violet irradiation in the treatment of gas poisoning. It is claimed that the ultra-violet rays accelerate the dissociation of carboxyhaemoglobin to a very marked extent. Carboxyhaemoglobin poured into a Petri dish lost 20 per cent of its initial content after five minutes' irradiation at a distance of 50 cm. The blood of a rabbit poisoned with coal-gas and showing 64 per cent of carboxyhaemoglobin lost 50 per cent of carbon monoxide after forty minutes' irradiation at 50 cm. distance, whereas the blood of a control rabbit, which was not irradiated, lost only 17 per cent of the carbon monoxide during the same time. A similar very striking effect of the ultra-violet rays was observed in the case of two poisoned girls, one of whom was treated with ultra-violet rays, while the other was not. Apart from their direct dissociating influence, the ultra-violet rays are said to cause also changes of the acido-basic balance of the body, resulting in an immediate stimulation of the respiratory centre.—*Brit. M. J.* 1: 71, April 27, 1929.

Earache of Buccal Origin

M. Truffert records three cases in which the chief symptom was intense earache, but examination of the ear showed no sign of inflammation and a normal tympanic membrane in each case. In the first case, examination of the mouth and throat showed a small cryptic abscess at the inferior border of the right tonsil, and opening this caused the earache. In the second case, examination of the mouth showed an impacted wisdom tooth, and after removal of the tooth the earache disappeared. In the third case, there was, in addition to the earache, an enlarged submaxillary gland; examination of the mouth showed that the symptoms arose from a calculus in the duct of the submaxillary gland, and with the removal of the calculus all the symptoms disappeared.—*Journal des Praticiens*, June 8, 1929, p. 380.)

**Journal of Bones and Joint Surg.*, April, 1927, (9:217:380).

Urology for the General Practitioner

VI. Nonoperative Treatment of the Male Pelvic Contents.

VICTOR COX PEDERSEN, A.M., M.D., F.A.C.S.
New York, N. Y.

Inflammatory changes of wide range in the female pelvis are very familiar, but those of the male are perhaps not so in equal degree. It is not well recognized that pelvic cellulitis in the male may be associated with prostatic, seminal vesicular and vesical infections and be as severe and serious as in the female. From this fact follows the importance of early and correct diagnosis and of prompt and conservative treatment.

The prostate and its nonoperative management are the subjects of this paper unless otherwise stated.

The family, the patient and the profession are now impressed by the common conditions of the prostate. These are congestion, inflammation, abscess, hypertrophy, neoplasm and calculus.

The demand of the laity and the growing tendency of the profession toward conservatism have brought non-operative measures into prominence and perhaps preference for valid trial. One may advisedly say that operation is always in reserve if nonoperative measures fail.

It will be interesting to consider each of the foregoing lesions as to origin and development.

Congestion is usually a local temporary surcharge of blood to the prostate and its annexa. Its degree may superinduce oedema followed by obstruction of the prostatic urethra. All the factors may arise within the prostate itself and constitute *intrinsic* congestion. It is *functional*, if due to temporary causes such as perversions and extremes of coitus, self-abuse, alcoholism and the like. It is *organic*, if it is part of any organic disease affecting the gland, such as infection, abscess, hypertrophy or neoplasm.

Congestion is *extrinsic* if due to causes in the system at large or in the annexa of the gland. The latter variety might be called sympathetic congestion were it not for the direct relation between systemic disease and all our glands and organs. Of these the prostate and the uterus are very apt to show disturbances. In local conditions causing prostatic congestion the nerves, blood and lymphatics come from the same general stems.

The list of occasional causes of extrinsic congestion is surprising: general ill-health, tuberculosis, malaria and cancer, liver diseases and inactivity, organic spinal lesions, injuries and fracture of the pelvis and coccyx, rectal infections, ulcers, fissures and fistulae, urethritis, stricture, cystitis and calculus. The influence upon the prostate of the majority of these is either through general ill-health or through local disturbance of circulation.

Infection is the most severe and common inflammation and must have a source outside or inside the urogenital tract. Within the former category is infection in fistulae, ulcers, abscesses, intestines, tonsils and teeth as examples. The urogenital sources are illustrated by the kidneys, ureters, bladder, urethra and testes.

Noninfectious inflammation is much less common. Injury is the chief cause by external violence or by internal damage as in instrumentation, operation or medicinal application or instillation.

Suppurative breakdown or abscess of the prostate may be primary from the lodgment of organisms originating in any of the points named under infection. Much more usually it is associated with suppurative posterior ureth-

ritis from which may proceed at the same time seminal vesiculitis of relapsing type with drainage or of abscess-type without drainage.

If a large part or all of the gland is involved then a single extensive abscess is produced. If many of the acini are invaded, scattered or grouped, follicular suppurative prostatitis is developed.

Enlargement of the prostate as true hypertrophy must be viewed from its five-lobed arrangement. The size of the gland is of much less importance than its obstruction with secondary decomposition of the urine and infection, often of the ascending type in the ureters or their lymphatics directly to the pelvis or kidney substance. The circulation is the other path of infection. A gland large to rectal touch may cause little urethral compression and residual urine while another much smaller by the rectum does the opposite. Midlobe hypertrophy is always of the highest grade in obstruction and increase of residual urine and infection thereof. In almost all cases middle lobes are the most dangerous. The cystitis, ureteritis, pyelitis, nephritis, and systemic absorption and depression, which are part of the late syndrome of hypertrophy, are essential to a proper consideration of this subject but brevity permits only mention, not discussion of them.

The chief elements of the prostatic neoplasm are its usually insidious onset, steady increase in size, hardness, extension and obstruction, accompanied or followed by four cardinal symptoms: pain, ulceration, hemorrhage and cystitis. When any one of these symptoms is established the growth is beyond our present methods of relief. Any large prostate is potentially neoplastic and should be conservatively so regarded. Often a prostate, seemingly benign at removal, shows itself cancerous in the deep field of operation within a few months or years. It is always well to give a reserved diagnosis and a warning, at least to one sensible member of the family, of remote possibilities. Then the operator is never in the position of having "*something unexpected develop.*"

Infection of the prostate is always a precursor of calcareous deposits in the gland, usually about amyloidal bodies as centres. As in the kidney so in the prostate, various germs have a facultative power toward calculus formation originally and secondarily to removal. Occasionally concretions exist without symptoms for long periods. Usually they show pus, hemorrhage and detritus in the urine, pain on motion or palpation and crepitation. Diagnosis is not the single fact of involvement and its type. It must include the cause, development and sequels of enlargement, for example, infection, local or systemic, bodily health and resistance, urinary function and efficiency, and alterations in the upper urinary organs. Prevention of these damaging changes lies in early recognition and, as required, operation. Once begun, their relief is imperative.

The medical diagnosis covers all other systems for primary or secondary foci of infection. It is the discoverer of the rôle played by the teeth, tonsils and gastrointestinal and cardiopulmonary systems, as examples, through a wide variety of general diseases. A seemingly simple but clinically important feature is constipation because of its toxic capabilities in age.

In considering these conditions and their correction, one must remember that the processes of the normal body are all gentle. Physiology is a series of delicately related sequences, not of strenuous activities. It is possible and proper to consider the resistance to disease also as persistent but relatively like physiology, gentle rather than violent. As far as possible the abnormal must be viewed from and back to the normal.

The delicacy of our organization is typified by the electron theory of matter. In health perfect electronic balance and action exist. In disease the electrons are out of balance and their action is not normal. As the electron theory must apply to our animal bodies, it rather follows that treatment of the electrical type had best be too gentle than too energetic.

Approach to the diseased prostate is operative or non-operative. Operations have been developed to a high perfection and are more familiar than the non-operative measures, except massage and urethral applications. The means presented by physical therapy were, in the United States, relatively new up to the war, but since the war they have been receiving more and more acceptance. They are available in operative cases frequently before and after intervention. Even during the operation they prevent shock. They have a distinct field in postponing operation so that the general health and urinary efficiency may be improved. In a restricted group of cases this postponement is definite and prolonged. It then becomes a great gain to the average patient in the adjustment of familial and civic affairs in expectation of ultimate operation.

The general advantage of electrical measures, properly applied to prostatic cases, is that the viscera and all tissues, bloodstream, lymphatic supply and nerves are all influenced toward restoration of function. The improvement which the patients feel and describe is the measure of these benefits, whereas gains in the condition of the tissues as regards secretions, excretions, absorption and function which the doctor observes are further measures of success. The strictly local results of electrotherapy are both mildly chemical and physical.

The field of general medicine is, as already stated, inclusive of many answers to the problems of these cases. General medicine becomes a guide as well as an adjuvant and corrigent.

The same principles apply to surgery as an immediate necessity. By reviewing the conditions underlying congestion, infection and abscess of the prostate one sees at once the truth of these statements. The methods of meeting these indications are so numerous and familiar that space excludes their discussion.

In applying physical measures acute disease indicates sedative restoration, whereas recreative stimulation aids chronic inflammation through the absorption of exudate and infiltration. A careful consideration of these states before selecting the modality and frequency and intensity of its application will avoid many mistakes. In addition and superior to the meter-readings and spark-gaps to determine the strength of current are the actual results upon the patient—his tolerance without unfavorable reaction at the visit—and the steady improvement in the condition. As a rule any current is wrong which disturbs the patient at the time or which does not promote natural restoration of local health. The modality must be changed in quality, frequency and intensity or have adjuvants and corrigents introduced. Mild measures do no harm and may be readily augmented for desired results, whereas strong treatments may cause disturbance, demanding attention in itself. It is far wiser to err on the side of mild treatments through long

sessions than harsh treatments with brief sessions. Thirty minutes per treatment is a good average. Visits every day occur only in rare cases and extend only a short period. Visits every other day are usual until improvement begins, continues and persists, then the interval changes to once in 3, 4, 5, 6, 7, 10, 14 days, according to results.

In a brief paper such as this electrical discussions are not possible. Hence the assumption is that the reader has a full working knowledge of the broad principles of galvanism, sinusoidalism, static wave, high frequency, x-ray, light and infra-red rays.

The diseased prostate, if amenable to physical measures, requires heat, drainage and resolution, and the patient requires building up.

Heat may be applied over the lower abdomen and buttocks for decongestion by means of the arc-light, radiant light and infra-red rays. This form of heat is heat by radiation. On account of the constancy of the temperature and the penetration of the rays this action is far superior to the hot sitting baths applied to the same area—from the level of the navel to the mid-thighs, back and front.

Heat may be developed in the prostate and its annexa by the resistance overcome by a current passing between two electrodes and through the gland and its region. Diathermy and galvanism meet this indication. Each develops heat by conduction.

Drainage of involved follicles calls for massage, which is readily supplied by the static wave current or galvanic or galvanofaradic sinusoidalism. Galvanism has a relaxing electrolytic effect, which indicates sinusoidalism whenever relaxation of the gland will benefit.

Follicles which do not evacuate after electromassage require digital massage. Inasmuch as pus pockets in general indicate cautious use of electrotherapy, it is good judgment to empty such foci digitally first and then apply the proper modality.

When the prostate is unduly atonic so that contraction of the tissues is required, then the static wave again fulfils a wide field more efficiently than the finger.

Along with the foregoing influences goes resorption of septic products and infiltrations, after the septic process has terminated and is of itself beginning to resolve.

In the resorption of dense tissue and the attempts at arrest of neoplasm, especially early, the x-ray gives high-grade service. In small doses it is stimulating and in large doses resolving. It also has actinic and hemostatic actions.

Just as diagnosis must include the causes already named as being immediately or remotely connected with prostatic lesions, so treatment must be directed to those causes in the aim at relief or removal. Abscess of the prostate must be evacuated before electrical measures are even considered, let alone applied. Basic principles such as these are the origin of success in the long run.

The patient as a being must be treated too. All general measures to enhance his health are indispensable in arresting the pathological process, promoting its disappearance, and completing functional restoration.

Sunlight baths, ultraviolet radiation, and various forms of balneotherapy for elimination and restoration must be employed.

This paper is not intended to be a final conclusion but rather a vital suggestion in modern physical measures as applied to the male pelvic contents. In addition it is aimed to correlate medical urology and surgical urology to physical therapy. It must not be forgotten that the decision of borderline cases as to their operative

and nonoperative status belongs to the trained urologist after full analysis and not to the physical therapist after superficial investigation.

As the writer of this brief contribution I do not wish to be understood as advocating abandonment of operative measures. Quite to the contrary I am much in favor of operative intervention in well selected cases and al-

ways practice it; but it is worth while to place physical measures where they belong in the antecedent care of these patients, so as to make surgery safer, as far as possible.

It is hoped that the suggestions contained in the contribution will be of service.

45 West 9th St.

The Toxaemias of Pregnancy From the Metabolic Viewpoint

GEORGE H. TUTTLE, A.B., M.D.,
South Acton, Mass.

In this discussion of the Toxaemias of Pregnancy no attempt will be made to cover the whole subject, but facts favoring the hypothesis that metabolic rather than nephritic or uraemic changes form the etiological basis of these toxaemias will be brought forward as a more recent and reasonable explanation of these states, especially as treatment along these lines has proved to be very successful. Hyperemesis and eclampsia are both believed to be different stages of the same disturbed metabolic state. Since this disturbance is mainly of the carbohydrate and fat metabolism, and has to do largely with the two conditions of hyperglycaemia and acidosis, it comes naturally into the province of the student of diabetes.

Before considering these pathological states it is necessary to have a clear idea of the physiological conditions in pregnancy. The organism of the mother is engaged in the process of producing a new member of the race. To do this all the functions of the body must be increased. During pregnancy the body weight of the mother increases beyond the weight of the foetus. The volume of the blood doubles and the heart shows marked hypertrophy. The general metabolism increases and the metabolisms of the three kinds of food show marked changes from the normal. There is a storage of nitrogen much greater than the needs of the foetus. Neutral fats and lipoids increase largely. Much greater amounts of carbohydrates are required in the diet than in non-pregnant women, since the metabolism of both mother and foetus must be provided for, and the loss of sugar over the lowered renal threshold, which is common in pregnancy, must be compensated for. The thyroid gland hypertrophies since more work is required of it. The pituitary also hypertrophies during the last two months of pregnancy. Although no observations have been made concerning the pancreas, it is not supposable that this has any need to hypertrophy since only one-tenth of the pancreas is necessary for normal metabolism without diabetes, and the nine-tenths reserve of insulin supply must be ample for all emergencies—unless diabetes exists in the particular case. It is also probable that all of the hormones of the various glands must increase to take care of this augmented general metabolism.

With the preceding remarks furnishing a physiological background, we can now take a broad view of the pathologies, or the so-called toxaemias of pregnancy. Broadly, we may consider these as the Vomiting of Pregnancy and the Eclampsias of Pregnancy; complicating these states but in no sense causing them, we must also consider Nephritic Cases.

The Vomiting of Pregnancy may be either mild or

pernicious, the latter being well known as hyperemesis. Of the mild form there is very little to say. It occurs during the first three months and probably represents Nature's effort to bring into co-ordination the increased nervous and endocrine forces of the maternal organization necessary for the act of reproduction. But when this mild form develops into the pernicious, with constant vomiting and danger to life, we must seek its cause and treat it vigorously. If the urine be examined, either by acetone papers or the ferric chloride test for diacetic acid, a condition of acidosis will be found to exist, and as this always means, in diabetic parlance, that the amount of carbohydrate metabolizing is insufficient to insure the perfect metabolism of fat, it is perfectly evident that more carbohydrate must be made to metabolize; and since the oral route cannot be used on account of the persisting vomiting, rectal enemas of corn syrup or glucose must be resorted to at hourly intervals until the vomiting decreases sufficiently to allow the oral administration of orange juice, ice cream or other carbohydrates. Insulin must be used in addition if the patient is a diabetic, otherwise the carbohydrate will not metabolize and the acidosis will not be removed. Although the vomiting in the first place may be due to some unknown cause, nervous or otherwise, once established it produces a vicious circle which makes it continue indefinitely unless stopped, since the acidosis state produced by the lack of carbohydrate ingestion is in itself a potent cause of vomiting. A return of the condition should be prevented by the giving of a liberal carbohydrate diet, with insulin if necessary.

Nephritic Complications—Nephritis is no longer believed to be the cause of eclampsia, since the changes found at autopsy are not of an inflammatory nature, but rather are believed to be the result of kidney engorgement during its efforts to eliminate the excessive supply of metabolites produced by the eclamptic state; which view is further supported by the fact that in recoveries the kidney symptoms entirely clear up immediately after the attack. Also kidney complications only occur in 2% total deliveries, although they are found in 25% of general toxaemias of pregnancy. Since they do not occur in the remaining 75% they can no longer be considered as the cause of them. Furthermore eclampsia itself very rarely occurs in these nephritic cases and when it does occur they cannot be the cause of the eclampsia.

Eclampsia—The etiology of this condition is still in doubt although progress is being made and the developments of the last few years seem to indicate that its cause will be discovered in the further studies of metabolism. Its general symptoms are well known and need

not be enumerated. Certain symptoms, both physical and technical, however, have received an added prominence lately. Stander, of John Hopkins, emphasizes the physical symptoms of severe epigastric pain, disturbances of vision, occipital headache, and dizziness, as definite warnings of the approach of eclampsia; and speaks of the technical symptoms of acidosis, raised blood pressure, low CO_2 combining power, and increased uric acid excretion as the outstanding features of eclampsia itself. But, to me in looking at pregnancies as a whole, the outstanding fact above all others is that out of every 500 to 800 individuals only one has an attack. In other words Mother Nature succeeds in increasing the metabolism sufficiently to produce the new being and sustain the original one in 499 out of 500 women, but in this one case some part of the vital metabolic machinery fails to work and eclampsia results. This one case is absolutely unique and must be explained by itself regardless of the statistical averages applied to the other cases. What then do the outstanding technical symptoms, found in this one case of marked acidosis and low CO_2 combining power, suggest to the diabetic student of metabolism? His first answer would be that acidosis suggests invariably a diminution of carbohydrate metabolism; and then he would add that this diminution was caused either by a deficiency of insulin or a deficiency of carbohydrates from the food. And if he were asked what would result from an exaggeration or long existence of this acidosis he would answer—diabetic coma; and we notice that both eclampsia and diabetes exhibit states of coma. Now in making up their theories in regard to eclampsia, none of our masters of obstetrics have so far given any consideration to the fact that the basis of all of these toxæmias may be an insufficiency of insulin, as I have already shown may be the case in the vomitings of pregnancy. Nor have they conceived of the possibility of this one woman out of 500 having such a weak pancreas that she could not take care of the greatly increased carbohydrate food required by pregnancy, and that, under the stress, she has developed an acidosis from an increasing disablement of the fat metabolism, and with it a generally disordered metabolism of all the foods; and that from this coma results and convulsions are added on as a result of the formation of poisonous or incomplete metabolites.

In connection with these thoughts and in substantiation of them it is interesting to examine the new methods of treatment and their results based on such metabolic reasoning. I have already spoken of the success of such methods in the vomitings of pregnancy. In eclampsia as well, during the last few years, many men of note have used insulin buffered with two grammes of glucose per unit to overcome this acidosis caused by the deficiency of insulin, due to the weak pancreas of the one woman out of five hundred who has had an eclamptic attack. This successful use of insulin seems to prove the contention that there is a lack of it in these eclamptic cases, and that such deficiency is the primary cause of them. It may be said further as strengthening the assumption that there is an actual deficiency of insulin, that two other well known facts support this conclusion. It is known that the thyroid remains hypertrophied all through pregnancy, and although its secretion does not directly inhibit the action of insulin yet the increase of metabolism produced by the pregnant state causes an additional demand for insulin, just as where hyperthyroidism occurs as a complication of diabetes the insulin requirement is always largely increased. There also occurs during the eighth and ninth months of pregnancy as a regular part of it a definite hypertrophy of the pit-

uitary gland and an increased production of pituitrin which probably becomes of use in starting up the pains of labor. Now, it is definitely known that pituitary extract reduces or inhibits the efficiency of insulin and more insulin is required for the metabolism while the pituitary is in a state of hypertrophy. These two influences, while not sufficient to produce eclampsia in the 499 women having a normal pancreas which can produce a super-abundance of insulin, are sufficient in one woman out of 500 having a weak pancreas to produce acidosis which leads to coma and convulsions. Loeser reports 45 cases treated successfully with insulin and recommends that in well established cases of eclampsia 20 to 40 units of insulin, together with from 1 to 2 grammes of glucose per unit of insulin be given. Stander says: "It may be said that when the CO_2 combining power drops below 30 volumes per cent the patient is suffering from an acidosis, and when it falls below 20 volumes per cent the patient is desperately ill and in urgent need of the anti-acidosis treatment (of insulin and glucose)." And while glucose (and insulin) will distinctly relieve an alkali deficit in either eclampsia or the vomiting of pregnancy, "it cannot be relied upon to raise the CO_2 combining power of the blood speedily enough in urgently sick patients", and in such cases he uses small doses of Na_2CO_3 in addition to insulin and glucose.

So that, in conclusion, it seems to the student of diabetes that the basic cause of eclampsia is an acidosis due to a deficiency of insulin in the one particular individual out of 500; and that the convulsions and succeeding coma must be ascribed to the violently deranged general metabolism by which the blood pressure is raised and multitudes of imperfect and poisonous metabolites are produced. The convulsions themselves must be considered as the last effort of Nature to supply more glucose to the system which needs it so badly, since by this means the last glycogen reserves are shaken out of the muscles and added to the blood current, and when those reserves are exhausted the patient dies, since neither the heart muscle nor the muscles of respiration can function without glycogen. All of the toxæmias of pregnancy should be treated with the advice and assistance of a consulting diabetic specialist.

The final practical point regarding the proper treatment to be used in these cases needs a little further elucidation. One group of obstetricians, led by Titus, believe that glucose alone should be given; the other group believe as I do that insulin together with glucose should be used. All of the evidence such as acidosis, low CO_2 combining power, low combustion of carbohydrate, etc., points to an overworked pancreas and a deficiency of insulin, so that it does not seem possible that hypoglycemia can be considered the cause of convulsions as they assert; and it seems reasonable that insulin must be given in addition to glucose to supply the deficiency, especially so since moderate doses of insulin well buffered by two grammes of glucose per unit can never produce hypoglycaemic reactions in any event. So that both insulin and glucose should always be used in these cases.

Pulmonary Tuberculosis

Pulmonary tuberculosis is a common infection in infants and young children, and can be recognized in its early stages. Early diagnosis is essential for appropriate treatment. The prognosis is good unless extensive disease has developed. The prognosis also depends on early removal of the child from the source of infection. A careful history as to exposure, a thorough physical examination, intradermal tuberculin test and x-ray offer methods of making an accurate diagnosis, both as to the presence of infection and the type of infection. The reaction in the lungs in the young child differs markedly from that seen in the adult with the same disease.—Happ, Calif., & W. M., Oct. 1929.

Dementia in Mental Disease

JOHN F. W. MEAGHER, M.D., F. A. C. P.

NEUROLOGIST, ST. MARY'S HOSPITAL, BROOKLYN; MARY IMMACULATE HOSPITAL, JAMAICA; ROCKAWAY BEACH HOSPITAL; CONSULTING PSYCHIATRIST, KINGS PARK STATE HOSPITAL, ETC.

Brooklyn, N. Y.

The difference between deterioration and dementia is one of degree. When mental deterioration is marked, then we call it dementia. Mental deterioration means a continuous loss of efficiency. The deteriorated individual shuts out the activities of the outside world, and as a result his mental capacity suffers. He has lost his emotional need for self-esteem and for the esteem of his fellows. The result is that emotional and intellectual degradation soon takes place, and he is no longer able to adapt himself at the psycho-social level.

The highest faculties are the first to disappear in mental disease—the affects, memory, judgment, self-control. So the first signs of deterioration are shown in the highest and most critical mental activities, e.g., the moral and ethical standards. Inattention, indifference, and poverty of the affects are characteristic of emotional deterioration. When an individual shows a cumulative steady loss of interest, this indicates that deterioration has begun.

There are grades of intelligence even among normal people. Intelligence is shown in part by the use one makes of the sum total of his available memories of past experiences.

In dementia, where we are dealing with a profound mental deterioration, we see a regression to a psychic death. There are left only the impulses, instincts and habits of the family or racial stock. Instinctive patterns are racial; association mechanisms are personal. There being a failure in normal associations, and in the ability to adapt to reality, these patients live in a world of phantasy. A permanent renunciation of efficient adjustments to reality means dementia. For prognostic reasons, one always dislikes to see evidences of dementia develop in a psychosis.

Causes

Mental deterioration may be due to psychogenic causes, or to toxic or organic causes. Personal and environmental maladjustments of a permanent nature are instances of psychogenic causes. Where an individual is unable to sublimate his instinctive difficulties, deterioration is apt to result. It is the unadjusted cravings in the demented individual which help to destroy his interest in society. If he cannot socialize his instinctive cravings, he remains infantile, asocial and shut-in. And whenever an individual suffers from a loss of the sense of power (personal, sexual, social), he tends toward inertia. In dementia, the phantasy motive entirely displaces the reality motive; and the individual's thought, being turned away from the facts of every day life, is symbolized, displaced and condensed as in dreams. It becomes senseless, silly and dilapidated.

With emotional indifference there is naturally a loss of interest; and a loss of interest in regard to the important things of life eventually causes intellectual decay. When interest finally becomes wholly turned in on one's self, a psychosis is apt to develop. Objectively-minded people, as a rule, do not become psychotic. It is necessary, in order to enjoy good mental health, to mingle with one's fellows. And one must love, and not merely expect to be loved.

Evidences of Dementia

Many deteriorated patients at first only appear irritable, and later on become indifferent. A failure to grasp

situations, or to do work requiring skill or intelligence, or a sluggishness in their associations of ideas may be the first indications of a beginning mental deterioration, especially if added to these are an affective poverty and indifference, and marked character changes.

The following, when more or less continual, indicate that mental deterioration or dementia is present—poor active attention, scant or inadequate affects, irritability or apathy, loss of affection, loss of interest with indifference. The most striking symptom observed is the emotional deterioration.

We find loss of mental activity, with inability to concentrate; gradual development of mental dullness; memory impaired with possible disorientation; slowness in ideational processes and associations, so that the vocabulary is limited, circumlocution is present, and conversation is tedious. Circumstantiality is common in slow dementias—as in epilepsy and senile dementia. It indicates poor judgment, whereby problems as a whole are poorly grasped, and unimportant details are not suppressed.

Defective will power, negativism or automatic obedience, silly mannerisms, impulsive acts and irrational habits are also found. The patient is apparently not interested in the motives for his reactions, which are inadequate and incongruous.

Later in dementia one notices poor memory retention, phantastic delusions and disconnected hallucinations. Eventually there is hebeticity, approaching the picture seen in the hebephrenic.

When dementia is complete, the delusions and hallucinations may disappear, as may his egoism and irascibility. For by now his personality has been wiped out. In other instances of severe disintegration of the personality delusions are absurd and stereotyped, and hallucinations may be numerous and scattered.

I will now consider a little more in detail the following—organic dementia, epileptic dementia, and dementia praecox.

Organic Dementia

Many of these dementias are quite slow, but are usually progressive. Dementia may also be due in part to the original disorder being complicated by the presence of arteriosclerosis, epilepsy or chronic alcoholism.

Organic brain disease (arteriosclerosis with cerebral changes, injuries, etc.) frequently causes a suppression of brain functions, which may lead to dementia. Evidence of gross brain disease may or may not be present. Disturbances of consciousness are common in certain forms of brain disease. In some cases (e.g. epilepsy with local signs) no apparent changes may be found to explain the condition.

In the organic syndrome showing dementia, there are disturbances in the emotions, intellect, and the will. We find some disturbance of consciousness, disorientation for time and place, sluggish associations, also perseveration which make them appear dull and stupid. They show a memory defect which becomes marked later in the course of the disease. They may show confabulations as seen in the Korsakoff syndrome. Early they may exhibit lability of the affects, and so be emotionally

unstable. Then loss of interest with indifference, followed by apathy, is noticed. A childish attitude toward their emotional upsets may be observed. They have a poor capacity for work, and are retarded in speech and action. Aphasia and other physical signs are observed. Most demented patients lack insight.

Amnesia of conservation is very common in organic dementia. With it may be associated two other forms of amnesia—of fixation and of reproduction. When retention is bad, you may get amnesia for recent events; also disorientation. If this persists, deterioration is to be expected.

Deterioration may affect all of the mental functions in senile dementia and in paresis. The course of the disorder is apt to be slower in the former condition.

In senile dementia, the following are characteristic symptoms—poor attention; perception disorders; poor ideational life, with inability to assimilate new ideas. Amnesia is common; their memory for present events, particularly, is poor. Being egocentric, they have little feeling for others, and their interests are very narrow. Indifference and poor judgment are due not only to the poor affect, but also because associations are scant. In them, nihilistic ideas are common, and their delusions are often senseless. Their reactions may be automatic or impulsive and their conduct often erratic. Reason and judgment are poor, and they lack insight.

Before the development of post-traumatic mental deterioration, there may have been at first a picture of some one of the classical psychoses.

In traumatic conditions, if dementia develops, it is usually organic in type, with possibly aphasia and other physical signs added. However, except for the etiological factor and the physical condition, dementia here shows no special differences from other organic dementias.

Traumatic dementia is shown by attention and memory defects and loss of interest, and defective judgment, because of the increasing defect of intelligence; also besides the amnesia, we note aphasia and the local physical signs. In traumatic cases, the dementia may remain stationary, and only show in certain defects of judgment, in abstract thinking, or on occasions when complicated feeling tones should normally be shown.

Alcoholic dementia is apt to progress unless checked early. In many chronic alcoholic patients, deterioration is noted soon. At first one notices numerous character changes; then aesthetic and ethical lapses. Their memory being poor, they readily forget things. Their reason and judgment are bad. The physical signs of alcoholism are present. Most chronic alcoholic delusional states show some dementia.

Epileptic Dementia

Epilepsy beginning early in life may cause dementia. When dementia occurs in epilepsy, it is permanent. Kraepelin thought that the most striking sign of epileptic dementia is the slowness in the psychic processes. According to him, there is some deterioration present in every chronic epileptic, though in 50 per cent of the patients it may be slight, affecting chiefly the memory. And then the mental condition may remain stationary for years. There are patients in whom it would be difficult to show any deterioration whatever. One writer said that the deterioration is as much a feature of the disease as the convulsions are.

Why the epileptic's deterioration is characterized by a disturbance of consciousness and a convulsion we do not know. As Clark said, the epileptic attack is a concession to the cruder egoistic self, and it is because of

this that the disease is progressive, and tends toward dementia, in the sense of a degradation of interests and capacities for adequate social contacts.

Two groups of interests sway all of us—our own interests, and society's interest. The epileptic is little else than an egoist. His loss of interest becomes cumulative, which indicates that deterioration has begun. The mental deterioration in chronic epilepsy is characteristic. Besides character changes, there is a progressive loss of mental power. There are disturbances in perception and will. There is a lowering of moral inhibitions, and the ethical sense becomes poor. Social inhibitions being absent, social deterioration is seen early in many of them. This is made worse by the fact that such a patient's inadequacies lead him to bad companions. Some demented epileptics with poor intelligence and a loss of personality show gross appetites, cruel behavior and vicious crimes.

The dementia in epilepsy often resembles that found in organic brain disease, e.g., a narrowing of interests, ideas and ethical standards, and the conversation is circumstantial and monotonous. However, in most dementias attention and memory are impaired. But in epileptic dementia memory is usually contracted only, so that they can talk coherently, though narrowly. In this respect this form differs from other forms of dementia.

Dementia Praecox

The essential feature of dementia praecox is that deterioration or dementia usually appears early in the course of the disorder, no matter what the age of onset. This is less marked in the paranoid forms. The degree of deterioration in great part depends on the amount of autism present. Because of his autism, the patient tends to shut out reality, and to live in a world of phantasy. It is because of the apathy and emotional dullness in the praecox, that we call his condition a dementia. Affective rigidity, in fact, is the most striking sign in dementia praecox.

In this condition the deterioration is the expression of the constitutional tendencies in extreme form, i.e., loss of interest in the environment, and a living in a world apart from others. In dementia praecox the dissociated state seeks gratification through hallucinations and delusions, and the normal affects are concealed or inhibited. The deteriorated praecox patient interprets his bad, dissociated self—his "not I", as another personality. There is a feud between the "I" and the "not I".

But it must be said that the idea of dementia as a permanent impairment in dementia praecox must be modified. In fact the apparent dementia is usually not real and is due to his lack of interest. For his memory and orientation are usually good. It is the affective poverty which we observe early, rather than any pronounced intellectual defect. Not all praecox patients become demented. So the name dementia praecox is a faulty one. And today we prefer to use the name schizophrenia as designating this condition. This name indicates a fundamental characteristic of the disease—the splitting of the psyche—in which we have a lack of co-ordination between intellectual processes and the affects, which should normally accompany them.

Where the cause which brought on the disorder was severe and adequate, and yet is removable, then we may find that the patient's interest may return. But where the cause of the psychosis was slight or inadequate, then the condition is more apt to become chronic. In one series of dementia praecox patients 60% became lightly, and 22% severely demented.

Shut-in types are more apt to deteriorate, as they

find it harder to adjust to reality, and so they lose their social grip early. And they seem unequal to adjust to their own personal difficulties. They are the ones who are more apt to retain an infantile, autoerotic attitude. It is because of the fact that praecox patients so readily revert to an autoerotic level that we regard them as having an abnormal psychosexual constitution, tending toward autoeroticism. Dementia praecox is not likely to develop in everyone, but most likely in those with inadequate instinctive adjustments and habits.

There are two ways of living—(1) by living a life of phantasy, with regression, (2) by living a life of reality, which is the normal way. A marked conflict may result in mental dissociation. So an individual may develop dementia praecox and deteriorate, because of insurmountable resistances against making a normal affective adjustment to a wife or husband, or to a parent.

Some paranoid dementia praecox patients after years of illness may show no defects in perception, orientation, retention, memory or knowledge. However, later, from the loss of the affect-interest, these intellectual qualities may suffer. They are then secondary. But again there are certain types of paranoid individuals (designated by Kraepelin as paraphrenics) who do show more especially intellectual disturbances, and who do not present the affective and will disturbances seen in the average praecox patient.

So while we must say that the praecox patient does not always show a steady, progressive deterioration, it must be said that a tendency to progressive deterioration, usually with remissions, is characteristic of this disorder. An individual attack may last only a short time. But after each attack one will notice defects in the emotional and volitional fields.

Evidences of Dementia Praecox

As I said before, it is because interest is turned in on himself that the praecox shows lack of interest outside; and he becomes inattentive and indifferent to circumstances in the environment. An apparent memory defect is usually more apparent than real. He naturally shows shallow reactions.

The poor affect of the praecox is usually in great contrast to his clear talking. He does things without feeling, or else reverses the feeling and so appears incongruous. The affective deterioration or dementia later on becomes almost absolute.

So we say that schizophrenic dementia is shown by uncontrolled affects and indifference; also by inefficient and queer associations and symbolizations, and stilted or impulsive conduct; all of which give the appearance of silliness to their talk and behavior. Irrelevant or inadequate associations are one of the fundamental symptoms of this disorder.

Though the intelligence quotient of these patients is often good, they seem to be unable to utilize their knowledge. Later on the content of their thought, which is feeble and shallow, dilapidates.

The mental disintegration may also be shown in the behavior. These individuals are never grateful, courteous or appreciative. They are usually self-centered, lazy and proud, and sensitive and suspicious. As they have no insight into their personal deficiencies, they habitually feel that they have been misunderstood and mistreated.

The schizophrenic is not generally demented like the patient with an organic dementia, but only in regard to a part of his psyche, and in reference to certain constellations and situations.

In the later stages we see an exaggeration of the

primary interest-defect; and there is a distortion in his train of thought. Absurd mannerisms, negativism, or marked suggestibility are present. There may be multiple delusions and hallucinations of bodily influence, etc., usually without any confusion. He becomes more and more inaccessible and eventually comes to lead a vegetative existence.

Diagnosis

As a rule the diagnosis of mental deterioration depends on the clearness of the sensorium, and the relative intactness of orientation. The deteriorated individual usually has no insight into his condition. Absurd, nonsensical delusions in the presence of mental clearness as a rule mean dementia. This is not so in unclear states, however, as in those seen in toxæmias, intoxications, etc.

A careful history will prevent one from mistaking an acquired deterioration or dementia for mental defectiveness, existing from birth. For no matter how badly disintegrated a demented patient is, he still preserves some remnants of his former good intelligence; whereas the defective never had a good intelligence.

In organic dementia there is weakness of memory, which is usually not found in schizophrenic patients, who are only inattentive, blocked, or prone to distraction. In organic dementia, the deterioration involves all the mental faculties. So the praecox patient is not demented in the same way that the patient with organic dementia is. He shows his reactions only under certain conditions, whereas the patient with organic dementia shows his pathological reactions at all times.

The patient with epileptic dementia shows more feeling than the schizophrenic; the latter being emotionally more apathetic and stupid. Also the epileptic is less disoriented and less silly. Both are given to sudden impulsive acts. In epileptic dementia there is a narrow ideational life, and poor comprehension. The dementia of the praecox is based on the blocking of feeling. If this blocking ceases for a time then during this period the praecox seems apparently well, and unless dementia is profound, the praecox retains much of his intellectual capacities. Both the epileptic and the patient with organic dementia may react to the world with appropriate and even adequate feeling, whereas the loss of interest and the rigid affect of the praecox makes him react with indifference. And the other two, unlike the praecox, may take pleasure in their work.

Management

We must try to prevent habit disorganizations and deteriorations in our mental patients. If given no personal attention, a deteriorating or demented individual will be made worse by long residence in asylums and prisons, because of the seclusion, absence of worthwhile interests, and the complete shutting out of all things that color and stimulate life. The whole aim of treatment is to make the reality motive take precedence over the phantasy motive. Very long, lazy vacations may in many cases be harmful, if no attempt is made to find out, and adjust, the patient's conflicts and difficulties. Proper interests, work and training may prevent deterioration in memory and in character. And good outlets are not only desirable, but necessary to relieve irritable tensions.

458 Clinton Avenue.

Carcinoma of Lung

Malignant disease of the lung often produces metastasis in the brain.—Kirklin, Calif., & W. M., Oct. 1929.

Pruritus Ani.

FREDERICK C. SMITH, M.D., M.Sc., (Med.)

INSTRUCTOR OF PROCTOLOGY, GRADUATE SCHOOL OF MEDICINE, UNIVERSITY OF PENNSYLVANIA.

Philadelphia, Pennsylvania

In pruritus of the perineum we have a symptom which causes the patient untold suffering and mental disquiet and which often baffles all attempts at arriving at a knowledge of its etiology. Anyone who has ever had an itch anywhere on the body can testify as to its upsetting effect. The victim cannot apply himself mentally to any of his usual duties and, try as he might, he cannot keep his fingers from scratching the offending part. Scratching causes a satisfying sensation for the moment but breaks and tears the skin, leading to infections, sometimes purulent, and only temporarily alleviates the affliction. Sleep is interrupted and, eventually, the general health is impaired.

Clinically, pruritus ani may be divided into four groups. In the first group are placed those cases due to diabetes, those due to infestation by pediculi or seat worms, and those due to skin diseases, such as eczema. Next comes the group that has a related local infection, such as is associated with fissure and fistula, and which is improved by operation upon the associated ano-rectal lesions with the consequent thorough drainage of the tissues. The third group, comprising a large proportion of the sufferers, has the itch because of pathology in some distant organ, e.g., the appendix, the gall bladder, etc. The final clinical group seems to have the pruritus as a nervous symptom, as an outlet for emotional stress.

It is manifest that treatment should be directed to the cause of the pathology. If the itch is due to diabetes, reducing the blood sugar by diet and other appropriate measures will alleviate the trouble quickly. Pediculosis may be eradicated by applications of mercury ointments. Worms are destroyed by santonin taken by mouth.

An interesting, accidental cure of a patient was effected several years ago by a colleague. The man had had his pruritus for some years. No cause for his trouble had been discovered and he had been subjected to all sorts of empirical treatment. Pure phenol, followed by iodine, citrine ointment and various strengths of silver nitrate solution had been applied, subcutaneous injections of $\frac{1}{2}$ of 1% quinine and urea hydrochloride solution had been used, ultraviolet radiation, Roentgen ray therapy and numerous other measures had been tried in turn and not one had proved of much benefit. One day the doctor injected a small hemorrhoid, intending to use 5% quinine and urea hydrochloride solution, but, in mistake, he injected a 50% silver nitrate solution. As a result the patient had some shock and within twenty-four hours he had developed an ischio-rectal abscess. This was operated upon and, when the wound had healed, the itch had disappeared, never to return. Of course, this is not recommended as a method of curing pruritus but it does show how a thorough drainage of the peri-rectal tissues may effect that result.

Many workers in the field of proctology have felt that they have discovered some specific organism which causes the itch. Thus, Murray¹ at one time talked constantly and wrote of the streptococcus fecalis. More recently Terrell² has written of fungus infection and is employing fungicides in the treatment of the condition. Montague³ advocates injections of stock vaccines of staphylococcus and colon bacillus. It is possible that some cases may be due to infection of the skin by fungus growths or bacteria and remedial measures directed to

this possibility should be employed if the etiology is in doubt.

A treatment much in vogue at present and reported by Yeomans⁴ is the subcutaneous injection of benacol at intervals of five days. This drug is a benzoate combined with phenmethylo and dissolved in oil of sweet almond. It is said to be non-toxic, highly anesthetic, markedly germicidal and depressing to peripheral nerve endings, and it is true that it does give relief from itching in many cases. In one clinic the patient is prepared for operation and, under sacral or caudal anesthesia, ethyl alcohol is injected into the tissues about the anus. A slough results and the nerve endings are destroyed. Some operators treat pruritus by various undercutting operations. Incisions are made about the anus and the skin with its vessels is separated from the underlying tissues. The objection to these surgical procedures is that there is no assurance of permanent gain. After the patient has been subjected to an extensive surgical operation, the itching may be back in all its vigor in from six months to a year.

-Ray and ultraviolet radiation have not given good results in the experience of myself nor of my immediate colleagues. Our usual empirical treatment is to apply pure phenol followed by tincture of iodine to the fissures which are usually present in the skin about the anus, particularly in severe cases. This procedure gives temporary relief and, when carried out periodically for a time, sometimes gives a permanent improvement. Between treatments the patient applies an ointment containing phenol, menthol, oil of tar and resorcin.

Internal hemorrhoids are apt to be accompanied by a low-grade, chronic infection and, when they are present in association with pruritus, they should be treated by the injection method or by operation. Acute ano-rectal abscesses, fistulae or other ano-rectal infections may be the cause of a pruritus and should be operated upon, the internal opening divided through, when present, and the peri-rectal tissues thoroughly drained. Anal ulcers are best treated by division of the sphincter under general anesthesia and excision of the infected tissue. In many cases I have seen an itch disappear after this procedure.

As Montague³ has pointed out, the cause of a pruritus should be sought for carefully in every case. It may be the earliest symptom of a carcinoma of the sigmoid and the diagnosis then can be made while there is still opportunity to save the patient's life. Chronic disease of the gall bladder or of the appendix may be found which is giving obscure symptoms and undermining the general health. In these cases the local discomfort is very annoying but it is the pathology to which it is pointing which is of importance. Again, focal infection in the teeth, tonsils, sinuses or elsewhere in the body should be sought for as the etiologic factor in the pruritus.

The cases in the fourth clinical group have been classified as of nervous origin but, in our present ignorance, they may belong in the third group. A typical case is exemplified by a banker who comes for treatment at irregular intervals. His perineum is entirely normal in appearance; there is no change in the skin denoting infection; he has no hemorrhoids nor other ano-rectal pathology; no pathology can be found elsewhere in the body, but, at times, he has an itch about his anus that almost drives

him frantic. When benacol is injected or another agent applied, he complains that his itch becomes worse. On questioning him I learned that these exacerbations of itching occur when he is worried about business. Following this information he was given bromides by mouth with immediate relief of his symptom. A friend who specializes in dermatology has told me that in every patient with a pruritus he goes most carefully into the history and, when he relieves some emotional stress, the local trouble invariably is relieved. He, too, like the advocates of the doctrine of infectious origin, is putting too much dependence upon a single etiologic factor.

In conclusion, the writer would like to stress the point that every patient with a pruritus of the perineum should be studied carefully to determine the possibility of a serious underlying condition. Local pathology should

be eradicated. Where no etiologic data can be unearthed, the patient can be made more comfortable and, sometimes, permanently relieved of the pruritus by application of phenol, following tincture of iodine, to the skin fissures, by injections of benacol, by the use of fungicides on the peri-anal skin, and by the injection of stock vaccines of staphylococcus and colon bacillus or by sedatives given by mouth.

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1823 Spruce Street.

Tonicity and Heart Reserve

MARK H. SMITH, M.D.

Hollywood, California

The startling increase in the death rate from causes classified under heart disease becomes a serious menace, for in large part it is avoidable. Deaths attributed to heat prostration and digestive disorders appearing with summer's warmth would be far less in number if physician and layman alike realized that heart defects commonly precipitate and perhaps constitute this mortality.

For the most part heart defects arise in ills of childhood to develop through self-neglect of physical condition in the maturer years of life, or at the very period when fully-gifted, adult reason should be directed to conserve the essential resource of heart reserve.

Any education that can be directed to guard against avoidable loss of life, or which can serve to protect values placed in jeopardy and which if lost would prove irreplaceable, becomes an economic consideration for immediate application.

Protection for and extension of earning capacity, whether it be in the form of actual money drawing interest in a bank, available muscle power which can be placed in operation, or a mental capacity which can be directed to govern human effort, really standardizes the interests that engage the attention of mankind in all fields of endeavor.

Any neglect of the requirements that are needed for extending life or for minimizing the expense required to benefit hearts known to be defective, and which if not carefully conserved are doomed to a shortened span of years, exacts a compensating penalty from the living.

Were we sufficiently apprised of the actual conditions which account for much of the poverty, squalor, alms solicitation, taxation for institutions for correction, for defectives and health restoration, the ever-presenting contact with ill-health and the visible proof of lack of success of the many in life's endeavors and ideals, we would find that heart defects of the earlier years of life served to handicap the efforts or actually to limit the attainment of many of these unfortunate and needy.

The moral obligation that is assumed upon an entrance into the profession of medicine, directed to the reduction of death rate and relief of human suffering, is but a sophistic gesture if imperiled by any wilful disregard for the warning finger of evidence, so mercilessly repeated in designating defective hearts.

Preventive efforts in medicine, directed to prolonging life, banishment of physical ills, delay in the onset of

age and dissolution of the physical cell, stand baffled with the enigma of the maturing cell which is destined to pass beyond the confines of youth and its conforming flexibility.

One of the most eventful phases, most certain in its exaction for privilege of life and direct in its influence upon the cell is the phenomena of resilient response and its defect. To this remarkable property we give the name of tonicity when attempting to describe its expression and manifestation in muscle effects.

It is this principle of tonicity which the youthful heart, normal or undergoing the burden of defective condition, must face, be judged by and weighed in its efforts for and response to duties that are incumbent in providing energizing elements or material for the composite structure of physical being, and upon which must subsist the characteristics which compose the ego of the individual.

Tonicity is a fundamental property of the heart. It is an essential requirement for adapting the response of the heart to the urgency of the moment as created by physical demand for carrying on the burden of exertion.

In operation, effective tonicity is comparable to the phenomenon of elastic response shown by live rubber which upon the advent of age or through exposure to inimical conditions, gradually or perhaps quite rapidly loses this resilient property.

Defined as the resistance that opposes the stretching of muscle fiber or as the force that these fibers exert in contracting from a certain length, tonicity becomes recognized as the "energy of contraction."

In proportion as the heart muscle tires, tonicity becomes reduced in its influence upon muscle fiber. The heart is always expending a certain amount of effort, manifested as tonicity, because of the constant requirement for adaptation of heart effort to supply blood for voluntary and involuntary activities of glands, organs, brain and muscle as well as for accommodation to the varied influences upon the physical state of such effects as are referable to posture, change in temperature, altered barometric pressure, additional humidity or any one or more of the many conditions which can effect mental tranquillity as well as physical state.

Not through any rigidity of heart wall, coronary pressure, expansion in altering muscle state or principle of

suction does the heart fill with blood. The process for this repletion is one of simplicity in a pressure conveyed through the great veins which terminate in the upper cavities of the heart and which is termed venous or positive pressure. This pressure is transmitted by the elastic tension of blood vessels farther up the circulatory stream as communicated by the propulsion given in impulse of heart contraction or ventricular systole.

The contraction of the heart really gives but little force in speeding the blood stream as compared to the amount of energy that is conveyed in overcoming the elastic tension of the vessels. While not accurately measurable it is estimated that in excess of ninety per cent of the heart energy is given to overcoming this element of resilient tension, which is required to be overcome before the blood can complete its circuit by either pulmonic or systemic lines back to the heart.

During the period of cardiac diastole or rest accommodation, the heart muscle relaxes to the degree that tonicity requires, this being accomplished by control of the length of heart muscle fibers. This influence is modified by such conditions as normality of heart, circumstances of circulatory demand, or remnant of load from preceding ventricular contraction.

It is apparent that any increase in venous pressure or of cardiac tonicity will alter load, volume or distension of the heart unless one of these features compensates or balances the other.

With high venous pressure the heart tends to overfill, while with high tonicity or its equivalent for antagonizing stretching of fiber, the resistance to filling of the heart is increased.

Combination of factors which modify delivery of blood volume into the aorta, as a low venous pressure, gives small filling; a low tonicity furnishes minor expulsion and if there is added an increase of pressure upon the distal side of the aortic valve, still further embarrassment with respect to the expulsion of blood from the ventricle occurs.

To overcome the emergencies that arise to interfere with discharge of normal amounts of blood from the heart and to meet the additional burden of any strain that is present, the heart must contract with added energy and lengthened filling period to increase the volume per second of work, or it must accomplish the same purpose by using a more rapid rate to expel a somewhat less quantity at each contraction.

Tonicity may be lowered from various causes, among which we may notice heart debility arising in local or general disturbances or from changes of heart structure in any one of the varied forms that are known to alter cardiac function and efficiency.

Some knowledge of the mechanics of respiratory influence upon the circulation of the blood gives a side light upon the effect of and reason for rapidity of breathing, whether such be in the short-breath type called dyspnoea, the result of pathology affecting the circulatory system, or that of compensatory necessity which results from muscular effort.

Inspiration lowers the diaphragm and produces negative pressure in the thorax, the blood in the abdominal veins is more easily crowded toward the right heart and the circulation is favored through the pulmonary structures. In its turn expiration crowds the blood from the lungs to fill the left heart and assist in forcing the aortic supply onward, favoring the arterial circulation of the abdomen and assisting in filling the rather enormous venous resources of this portion of the body.

Recourse to a few facts and figures becomes rather enlightening at times and often serves to form a most

convincing argument as to the error or benefit reposed in certain lines of treatment.

Being very elastic, the abdominal vessels are capable of containing most of the blood from the entire system. The liver is so vascular an organ that it can hold about one-fourth of the entire blood content of the body.

When erect, man has his heart as a circulatory pump located above the reservoir of abdominal supply or the venous cistern, which is composed of the ascending vena cava and its tributaries. The portal system with about 400 cc. of blood, the hepatic supply carrying fully as much and the ascending vena cava with another 400 cc. of blood present a capacious load to be influenced by diaphragmatic pressure as produced through the respiratory excursion.

If we add to this the pressure from distension of stomach or intestine in the presence of food, drink or gas, it is apparent what pressure exertion in the form of tension upon the circulation may create to affect the heart muscle.

The normal output of blood from the heart through the lungs alone measures approximately three liters of blood per minute during the resting state. Under the effect of exercise this volume is increased about seven times, which gives some idea of the needs of elasticity in accommodation conveyed through the tonicity control of heart fibers.

It is estimated that three to four liters of blood are contained in the circulation. About a third more is pooled or located in withdrawals from the active circulation. To this quantity there is available for the requirements of reserve the lymphatic supply, just as the lymphatic circulatory system is available in time of necessity to absorb circulatory overflow. Thus there appear certain resources to which tonicity may make appeal for relief of strain when urgency is immediate.

With doubling of the heart rate above the normal figure, the volume of each heart contraction per minute shrinks from 60 cc. to 10 cc. while the total minute volume will probably be reduced from six liters to one liter or less.

One views with considerable concern the appearance of pallor of face or indication of cyanosis in those adipose individuals with lax abdomens and toneless muscles which support the weighted bellies and which add to and interfere with the effort of emptying the abdominal pool of blood with every occurrence of slight increase in exercise.

But the factors of intense application for apprising us of the dire effect upon the value of tonicity of the heart and which is not replacable by any other heart quality, are really those which more directly deal with the elements of age, alteration of heart fiber from pathology or valvular change, as well as the physical effects which are produced by those factors of heat, humidity and other influences suggested previously.

Accrescent age limits the extensibility of heart fiber. Blood supply to the heart muscle itself is of direct concern and as much so is the nourishment of the center of tonicity which governs heart power. The circulating blood supplies energy-creating material and keeps it at proper nutrifying value. This pabulum for persistence of life becomes limited within the heart in the shrinkage of arterioles and the capillaries, which so ramify in vast number throughout the heart substance that each individual fiber has a direct supply.

Aging carries one away from the athletic provision of the younger years and in consequence the reserve that such activity creates. Athletic reserve arises in the production of grosser heart fiber, a provision for greater content to supply a maximum in nutrition for expenditure of energy upon prolonged demand.

With other conditions normal, the aging cell becomes handicapped by a shortened fiber with increase in inelastic structure surrounding or connecting heart fiber, a diminished reserve and a fibrosing condition which allows less expansion or contraction of heart fibers.

With the occurrence of pathologic change in heart structure or of valvular alteration, we are perhaps confronted in the earlier years of life with much of the condition that should occur, in the matters mentioned, in the advanced years of life. To summarize them we find then a limited reserve, altered heart fiber and increased connective tissue which resists the stretching of fiber, and there is also usually present in addition an alteration of that vital heart structure which normally exhibits the phenomena of originating and conveying the contractile impulse.

It is quite apparent that in the construction of the human heart nature did not make much recognition of the fact that one or more of the essential valves supplying this pump might lose its efficiency, for the mechanism provides little alternative other than to submit to the backward flow of blood when any interference in valve closure occurs.

In consequence, tonicity is called upon to make use of auxiliary methods in the presence of heart leaks or any appearance of impediment checking the onward flow of blood through narrowed openings.

Early in the occurrence of heart defects in childhood, necessity takes advantage of the quite limited resources for heart assistance to amplify the performance of the function of tonicity. In consequence those perils which are always likely to arise in physical requirement for increased capacity in circulation find that much of the normally available factor of tonicity with its resources is already depleted.

Although we may be subjected to the inevitable maturing of the cell as aging in structure, yet provision is afforded us for minimizing this disadvantage by protecting the remaining resources available, to fullest capacity.

With a knowledge of the dire effects from increase in the surrounding temperature above that which we find comfortable in our environment, and with the significant warning which a low barometric pressure indicates in the presence of depleted heart reserve, we may anticipate other serious effects.

The detrimental influence shown upon a laboring heart by an increase in humidity, especially when the environmental temperature is also elevated, and through which the heart is driven to dissipate an increase of heat generated by metabolic activity, indicates that a remedy should be immediately provided to relieve the heart strain that is impending if not already present.

If we temporize in the handling of these cases under the impression that alarm is needless and that no serious attention need be directed to relief of the symptoms that are shown, the golden hour for economizing effort, for preventing cost and facilitating subsequent restoration of vitality, has struck and gone.

If one feels that there exists a limitation in therapeutic benefit or one is incredulous concerning the value of approved attention, at least there can be no objection to a reasonable consideration for limitation of summer-season activities to minimize pressure upon the circulatory stream and heart.

Curtailement of the habit of frequently repeated and copious draughts of fluid imbibed during the warmer season, and which when indulged in but pours additional content into the venous cistern, becomes a first step for saving hearts that suffer in the summer tide.

Any increase in fluid ingestion must be flooded out-

ward through capillaries of skin and kidney, a process that requires additional heart pressure and consumption of energizing material either in the form of additional food supply or in exhaustion of storage or reserve treasured in the body cells.

Food and fluid ingestion advances the metabolic rate which is directed to the effort of keeping the body at a normal temperature and cooled through the radiation of internal heat effects plus the burdening effects of accelerated pulse and increased respiratory rate.

There becomes especially involved the activity of the thyroid gland, which has a specific effect in stimulating the center for cardiac tonicity located at the venous termination in the right upper heart, as well as an influence upon the increase of pulse and respiratory rates.

All too frequently are heart defects accompanied by defective thyroidal function, a depravity in its effectiveness being particularly shown in the fleshy and flaccid persons in whom we find the tissues of the body smothered in fluids which accumulate heart strain and failing tonicity. The blanket warming the body surface increases and there is an aggravation of the condition that has induced the partaking of copious and cooling drinks.

The business man of today is learning efficiency measures in vacations during the heated term of the year. Perhaps much benefit reposes in an escape from the variegated and seductively displayed drinks and light foods at the soda fountain, and which, while seemingly so harmless, when indulged in may provoke the very conditions that one seeks to avoid.

Increase in abdominal pressure, stimulation of metabolism, added circulatory pressure from intake of fluids, decrease of surface radiation in surrounding media of heat and humidity, with more frequent respiration and accelerated pulse induce the very effects that occur in rarefied air, altitudinal elevation, and lowered barometric pressure, plus the element of exertion, all shown as being detrimental to the fatigued or over-burdened heart.

The circuit completes, again comes the heated term which is vainly assaulted in the copious libations to keep cool, and the frantically waved, really useless and aggravating fan offers no remedy for the appearing pallor of the face that indicates impending heart failure, perhaps more dramatically shown in the drawn and anxious face of the adipose person.

Yet those who pursue the lighter vocations through stern necessity, calling for less violent physical effort, likewise labor under lessened heart reserve, only to rapidly develop the already advancing factors which have been mentioned as attending the aging heart cell.

The ever-increasing consumption of sweetened drinks at the soda-fountain, seaside or mountain resort, and the activities of the festive week-end or "days-off", are misdirected measures for the benefit and rest of a physical cell that is clamoring for relief of its burden and favor a high and needless death rate.

The mortality promises to increase still more through neglect of heart fiber suffering strain under the height of summer sun unless we awaken to perils that particularly attend upon the heated season.

Formerly we knew of the "beer-drinker's heart" from small alcoholic content and large amount of fluid indulgence, but today there is little difference in the effect of flavored and sweetened concoctions the consumption of which vies with the brewery product of not long since.

Neglect of youthful and mature hearts, already defective and unable fittingly to meet the added burden of the seemingly harmless indulgences mentioned, becomes a wasteful cost in the economy of human life.

912 Guaranty Building.

Iodine Versus Goiter: Facts and Fallacies*

ISRAEL BRAM, M.D.

Philadelphia, Pa.

Since the views expressed are often conflicting, a perusal of the voluminous literature on iodine and its relation to goiter renders it difficult for the general practitioner to separate fact from fallacy. He is informed that iodine is a preventive and tacitly advised to use it as cure. The first is fact, the second fallacy. He is told that iodine relieves the symptoms of toxic adenoma, and elsewhere warned against its use in this condition. Reams have been written on the use of iodine in the preoperative treatment of Graves' disease, but aside from a casual warning, little or nothing is said on the use of this drug in the non-operative management of this disease.

The purpose of this brief paper is to present our experiences with iodine based upon a study of over 11,000 cases extending over a period of two decades. While some of the statements may not be in accord with the views of other observers, nevertheless they apply to this series and may be accepted at their face value.

IODINE AS PREVENTIVE OF GOITER

Prevention refers to the avoidance of something which does not exist; cure, the overcoming of an existent condition. The observers who discovered that in endemic goiter districts the main cause of goiter is a deficiency of iodine in food, air or water, performed a great service to humanity. In many quarters, unfortunately, this discovery was interpreted in this wise: "Iodine is the cure for goiter". Thus the term prevention is confused with the term cure, and countless individuals, including a goodly percentage of physicians, are acting upon the notion that iodine is the direct antagonist of goiter. The resultant harm will never be adequately estimated.

Properly administered under expert guidance, iodine in minute doses is eminently successful in reducing the incidence of goiter in school children. Whether individual or general (State) prophylaxis is most feasible is a question to be determined. Also we are faced with the problem that a small percentage of humanity is unduly susceptible to the effects of iodine, rendering it necessary that individual observation control its administration. Generally, however, insofar as prophylaxis is concerned, the goiter problem is apparently solved.

I say "apparently" advisedly. When goiter is not endemic, prevention by iodine is questionable. Again, a percentage of individuals residing in endemic districts develop goiter not of endemic but of sporadic causation. In these the cause is not lack of iodine but something else. Heredity, auto-intoxication, infections, physical and mental stress and strain, and the physiological changes incident to puberty, adolescence, menstruation, pregnancy, lactation, menopause and other known and unknown factors are among the causes of sporadic simple goiter. How can we expect iodine to prevent goiters originating from this complex etiology? Is it rational to universalize the iodine preventive? Herein lies an unsolved problem. It would appear that in a percentage of humanity, particularly those not residing in goiter belts, prevention of goiter lies in a periodic physical and mental inventory with a view to correction of discoverable faults in the interest of perfection in general health.

EFFECTS OF IODINE ON THE THYROID

In the normal thyroid iodine appears to be either inert or to stimulate its function. In those susceptible but not yet possessing goiter, this stimulating effect in which

the underfunctioning thyroid is brought to normal function is the *modus operandi* wherewith goiter is prevented in endemic districts.

Upon the goitrous individual the major effect of iodine, when pathological conditions permit, is to occasion a marked accumulation of colloid substance within the thyroid acini. Four facts are associated with iodine administration in the hypertrophic, colloid, and the hyperplastic thyroid: (a) a marked accumulation of colloid; (b) compression upon and flattening out of the secreting cells lining the acini as the result of this accumulation; (c) reduction in vascularity for the same reason; and (d) a resultant *increase* in the size of the goiter.

In the average case of goiter to expect, through iodine medication, a reduction in size of the mass, is inconceivable. Most goiters become larger under the influence of iodine and the occasional exception cited is no more remarkable than "the exception which proves the rule."

IODINE IN TREATMENT OF NONTOXIC GOITER

Under the influence of iodine a hypertrophic thyroid gland becomes so infiltrated with colloid as to grow larger, at times to an alarming degree. The same may be said of a colloid goiter which in addition to increasing in size may undergo cystic degeneration and occasion pressure symptoms. To push the iodine in increasing doses under these conditions may result in toxicity.

Again, iodine is not to be employed in the treatment of simple adenoma or thyroid cyst. The only sane treatment of these goiters is surgical. We have repeatedly had patients referred to us who had been treated by iodine and in whom an adenoma or cyst became larger, toxic, or both. How this toxicity is brought about is still in speculation, but the fact remains that iodine is never to be employed in these types of goiter. "Iodine-Basedow" is usually the term employed for the symptoms presented.

IODINE IN THE TREATMENT OF TOXIC ADENOMA

Since iodine is contraindicated in simple thyroid adenoma, it follows that it is doubly opposed to the interests of the sufferer from toxic adenoma. If iodine is capable of changing a simple adenoma to "iodine-Basedow" its harmfulness in an adenoma which is already toxic should be taken for granted. And yet a few observers insist that this drug is quite as useful in toxic adenoma as a preoperative measure as it is in exophthalmic goiter. In our series we find that iodine in toxic adenoma is quite as harmful as is thyroid extract. The uncommon instance in which iodine appears to improve a sufferer from toxic adenoma is probably one of improper diagnosis; the patient is probably presenting not a thyroid adenoma but the hyperplastic thyroid of exophthalmic goiter. Mistaken diagnosis results from the view that toxic adenoma and Graves' disease are "different manifestations of the same disease." Small wonder that confusion prevails when these distinct entities—toxic adenoma (hyperthyroidism), a thyroid condition giving rise to constitutional symptoms on the one hand, and exophthalmic goiter (Graves' disease) a constitutional condition giving rise to thyroid symptoms on the other, are commonly blanketed under the term "hyperthyroidism"! Certainly both present some symptoms in common; but the local and general points of difference are as numerous as are the differences manifested between the skin rash of measles and that of eczema.

It is of course conceivable that in an isolated instance

* From the Bram Goiter Institute, Upland, Pa.

a sufferer from adenoma can present a superimposed unrelated Graves' disease, in which event iodine may have some ameliorating influence for a while, but in clear cut cases of toxic adenoma iodine has been distinctly harmful in our series.

IODINE IN THE PREOPERATIVE TREATMENT OF EXOPHTHALMIC GOITER

Generally speaking, in approximately 15 per cent of cases the subject of Graves' disease has an idiosyncrasy to iodine and becomes worse under its use. In about half of the remainder (approximately 43 per cent) this drug exerts a profound temporary influence in the amelioration of the general symptomatology. There is always an associated increase in the size of the thyroid gland. The *modus operandi* of iodine in its influence upon the thyroid gland has already been explained above. It is a matter of tremendous colloid accumulation, the crowding out of the infolding and lining cells of the acini and reduction in vascularity of the organ. In the average favorable case, after a week or two of iodine administration, the surgeon can now step in and perform thyroidectomy with a minimum of risk and of postoperative reaction. The matter of the *rationale* of thyroidectomy as a means of treatment of Graves' disease is of course another problem.

IODINE IN THE NONOPERATIVE MANAGEMENT OF EXOPHTHALMIC GOITER

The claim by surgeons that iodine is dangerous if employed as the medical management of Graves' disease is largely justifiable inasmuch as in the hands of the inexperienced this drug is certainly a dangerous remedy. Expertly applied, however, iodine is of real use in selected cases. When to give it, when not to give it, how much or how little to give, and when to reduce or withdraw iodine—these must be answered with precision.

It must be emphasized that iodine is by no means the treatment of Graves disease. The placing of the patient in bed and the giving of iodine do not constitute the treatment of this disease. This definition of the non-operative treatment usually results in dismal failure, and is what has placed the nonsurgical aspect in disrepute. Non-operative management demands a qualified rest program, a diet that is studied relative to quality and quantity, psychotherapy, and other factors favoring an elimination of discoverable causes. It must include a correction of physical, mental, and social vicious circles, and the adoption of measures calculated to assure permanency of recovery. Drugs, when employed, play a minor rôle and iodine may be merely one of several medicaments discovered to be useful.

The following "don'ts" are suggested in these circumstances:

1. Don't start iodine administration in doses larger than an equivalent of five grains of the sodium or potassium iodide daily.
2. Don't increase the dosage beyond thirty grains daily.
3. In the presence of immediate intolerance to iodine as evinced by an exacerbation of symptoms, don't continue its use.
4. Don't give iodine to patients with a complicating skin or kidney disease.
5. In the event of a patient presenting a history of having been markedly iodinated, don't give iodine until effects of previous iodine administration have worn off.
6. Don't give iodine to patients presenting an unduly large hyperplastic thyroid or a thyroid swelling that is partially or wholly intrathoracically located. I have seen several cases in which iodine administered to a patient with a large hyperplastic thyroid with or without sub-

sternal extension resulted in almost fatal asphyxia from the tremendous increase in size of the swelling.

It appears that the percentage of sufferers from Graves' disease in whom the administration of iodine is really indicated is comparatively small. The administration of this drug must depend upon mature judgment and experience.

The most satisfactory patient for iodine administration is of middle or past middle age who presents a thyroid that is either normal in size or moderately swollen. The syndrome may be of severe type, with exophthalmos, trembling, tachycardia, emaciation, and even stubborn diarrhea, but if the individual is of the above mentioned type chances are that iodine, carefully administered, will be of signal service.

Whenever it appears that iodine should be tried, its administration should be under careful guidance, the patient should be frequently observed, and the drug discontinued when, within two or three weeks, it is found that its usefulness is questionable. At best, iodine administration serves its purpose most satisfactorily when it is given for two or three weeks, withdrawn for two or three weeks, readministered for a like period, and again withdrawn, and so on. In this way no opportunity is given the drug to occasion perilous exacerbation, and the accumulation of benefits from these periods produces a sum total of relief that goes far toward assistance to the goal. Administering iodine in this fashion will not favor tangible thyroid enlargement. At the same time, the general improvement soon becomes established, for the drug is withdrawn before marked macroscopic changes have developed in the organ, and when it is readministered its size is no larger than it was originally. Several periods of administration and withdrawals of iodine in this fashion soon lead to the point when, despite iodine, the thyroid will shrink, and when this point is reached local and general strides toward recovery from Graves' disease are evident to all.

Finally, my best suggestion to those who are novices in this work is: in case of doubt as to whether to administer iodine, Don't!

CONCLUSIONS

1. As a preventive, iodine, administered under proper guidance, is markedly reducing goiter incidence in endemic goiter belts throughout the world. In sporadic simple goiter iodine as a preventive is of doubtful value.
2. In simple hypertrophy or colloid goiter iodine is generally contra-indicated as it is capable of increasing the swelling and rendering it toxic.
3. In toxic adenoma, it is extremely doubtful whether iodine is of any service. When it seems to relieve the symptoms the probability is that the diagnosis is wrong and that the case is one of typical or atypical thyroid hyperplasia of Graves' disease. This confusion is due to lack of discrimination between toxic adenoma and Graves' disease and the loose use of the term "hyperthyroidism".
4. In the preoperative management of exophthalmic goiter (without consideration of the *rationale* of surgery in this disease) iodine reduces the operative mortality rate and abbreviates convalescence in a large percentage of cases.
5. In the nonoperative management of exophthalmic goiter iodine, if used at all, is to be regarded as a mere asset in a broad regime of treatment embracing a qualified rest program, a satisfactory dietary, psychotherapy, and other factors employed by the well-equipped internist or endocrinologist. In fully 15 per cent of cases the patient has a distinct idiosyncrasy to iodine; in the remainder, one-half do not improve on this drug, while in the balance its careful administration assists in the restoration of the patient to normal.

6. The best subjects for the administration of iodine are those of middle or past middle age in whom, irrespective of the severity of the remaining symptoms, the thyroid enlargement is moderate or *nil*.

7. The administration of iodine in Graves' disease requires the guidance of one with mature knowledge of the disease and the patient behind it.
1633 Spruce Street.

Prostatic Neuralgia

J. L. WOLLHEIM, M. D.

ATTENDING UROLOGIST, LENOX HILL HOSPITAL DISPENSARY, NEW YORK CITY
New York

The neuroses of the prostate have drawn little attention from the medical profession in general, and the writers on urology in particular. The literature has practically ignored the subject, and in view of the importance of it, I think that an attempt to draw attention to its existence is in order.

Of the many authors consulted including Young, Cabot, Morton, Taylor, Thompson-Walker and Casper, none mention the exceedingly painful and tender prostate except the last. And to the English translation of Casper which quotes Pyle, do we owe a debt for the classification of the neuroses of the prostate. Pyle divided them into three classes, *first* those involving the gland itself, *second* those involving the prostatic urethra, and *third* those involving the sphincter of the bladder.

At present I am interested only in the first class (those involving the gland itself) as it seems to be a complete clinical entity; the other two classes involve the so-called functional and secondary conditions such as impotence and the frequency cases of other origin.

To completely understand the subject of the neuroses of the prostate gland, a brief résumé of the gland's nerve supply may be in order. These are from the hypogastric plexus and the third and fourth sacral. But not so important as the supply, is the type of supply and the end-organs. The prostate contains motor nerves, sensory nerves, special sensual nerves, and special nerve end-organs related to the so called Paccinian bodies.

These end-organs are the peripheral nerve beginnings of centripital neurons. They have been variously described as Paccinian corpuscles, Vater's corpuscles and Herbst's corpuscles, all highly differentiated. To the first group belong the end-organs of the prostate because they are lamellated, and to the last group belong other genital end-organs.

So highly differentiated are these genital end-organs, that still another organ type is found in the clitoris and the glans penis. It is not much of a stretch of the imagination to see a muscular sponge, filled with very many and various nerves and end-organs. It is further easy to imagine a highly specialized organ upon whose proper function so often depends man's happiness.

With any slight disturbances of the sensory division of the prostatic nerves one may see a train of symptoms anywhere from frequency of micturition and the sex psychoses on one hand, to almost complete invalidism on the other. When the sensory nerves within the gland proper are in a state of excitement there is no limit to physical suffering. I refer to the *class one* spoken of above and prefer to call this class of case "Prostatic Neuralgia." In all of the cases of prostatic neuralgia I have seen, objectively there was nothing to be found except tenderness. The prostate was not enlarged and its secretion was normal. It was excruciatingly tender to touch, examination often causing much agony. There was no discharge, the urine was

clear (unless bladder infected by urologist), the prostatic secretion was normal, there was no residual, and cysto-urethroscopic examination was negative.

These patients complain of pain in the perineum which is exceedingly exacerbated following intercourse and usually manifests itself the next day. They pass from one urologist to another, are labeled "Prostatitis," and are in general a miserable lot. The diagnosis is not particularly difficult if its possibility is only borne in mind. In other words, signs are virtually negative, objectively, but subjectively there is pain in the perineum with weight sensation, and it is always worse following intercourse. These cases must be differentiated from the so-called painful perineal body cases, usually of rectal origin. Because their attention is always called to their sex organs, they may be and generally are neurasthenics, and by the term I mean fussy, cranky, and easily upset.

I have tried various treatments to alleviate the sufferings of these patients and have finally decided on two types of treatment. They should be treated medically as general neuralgias without a focal infection elsewhere, or by large doses of heat applied per rectum to the prostate by diathermy.

To illustrate the two types of treatment, one patient (Mr. S.) about fifty years old, generally of a happy disposition, for several months had exceedingly severe pain in perineum, had gone the rounds, and had received all kinds of examinations, and when seen by me was very miserable. A careful examination was absolutely negative, and a diagnosis of prostatic neuralgia made. He recovered in a short time with rest in bed. A powder was given of acetylsalicylic acid, acetphenetidin, and caffeine, with codein at night, substituted for the caffeine.

To illustrate the second type of treatment (Mr. A. B.), furrier, never infected, for several years practiced coitus interruptus, for three years had severe pains almost constantly in the perineum, but always worse after coitus, had seen twelve men before consulting me and had got no relief; examination here was absolutely negative except a very tender prostate with normal secretion. The first treatment with diathermy using a prostatic electrode in rectum, and a large indifferent plate on abdomen, above pubes, giving 600 M.A. for thirty minutes, brought considerable relief, and this was continued semi-weekly for some time chiefly because patient was afraid to discontinue. Of course coitus interruptus was stopped. Patient has been abroad since treatment and is well and exceedingly happy.

I don't know the etiology of this disease, but I would not be surprised if like many other urological disturbances it was caused by coitus interruptus, such sequelae have been shown by Hühner to follow this procedure.

If this brief discourse serves to draw the profession's attention to this exceedingly annoying condition, more of these cases should be properly diagnosed—sufficient compensation for these humble efforts.

125 West 72nd Street.

Convalescent Care as a Clinical Fine Art With Special Reference to the Needs of the Client

Third Article

J. MADISON TAYLOR, M.A., M.D.

FORMERLY PROFESSOR OF PHYSICAL THERAPEUTICS AND DIETETICS, MEDICAL DEPARTMENT,
TEMPLE UNIVERSITY, PHILADELPHIA, PA.

Philadelphia, Pa.

Hindrances to Organic Interplays

REMOVING RIGIDITIES FROM FRAMEWORK OF CHEST, TRUNK, BACK, HIP BONES AND JOINTS AS ESSENTIALS FOR HARMONIOUS FUNCTIONING OF THE SOFT COMPRESSIBLE INTERIOR ORGANS

INCLUDED IS THE FAVORABLE STOWING AWAY OF THE SPHERICAL AND TUBULAR CONTENTS; ALSO OF MAINTAINING TONE IN THE SUPPORTING STRUCTURES

We will assume that each or every measure regarded by the physician as eminently suitable for recovery have been used. Some betterments no doubt ensued and whatever one direction of disability or distress persists the opinion is quite natural that it is caused by some obstinate deficiency of the constitution or repair forces. Or it may be blamed on the urgent demands of life, worries, domestic or social dysharmonies. In fact any or everything is held accountable except the right one. Now I venture to ask your attention to what that one thing seems to me to be.

You can readily appreciate the fact that those frame work parts of the body which contain the vital, vegetative and other "noble organs" should be in, and remain in, or recover good conformation, fit condition and mobility. Unless they are able to do their appointed work freely, fully, and completely the whole organism suffers in particulars, no matter how sound and capable these organs may be. Moreover if, or when—as often happens—these *containers* of the organs—the chest, trunk and pelvis or hip region—are unable to do, or omit doing their part as supporters of these delicate structures, then other forms of disease will arise; or old ones persist.

Unless they freely and comfortably interplay among themselves, one or other part—the tubular ones in particular; intestines and blood vessels—may become compressed here; kinked or angulated there; pinched and deprived of nerve supply; weakened, toneless, dilated, unable to keep the stream of fluids on their way as per schedule. Hence the fluid and gaseous materials which should keep steadily going on to destination will be materially delayed; the fluids will spoil, ferment, putrify, and poison the organism.

Opportunities for normal interplays of the functions of respiration, circulation, digestion and reproduction depend in great measure upon the space they occupy, to live and work or play in. They can only do their perfect work when these compartments are roomy enough, and have the unique qualities of living machines; when they yield suitably, open and close up properly, and when those parts designed to act as supports are strong enough to meet requirements, such as when to relax and when to contract in maintaining easeful actions and reactions.

In short, these living rooms or quarters must have suitable adaptabilities. Or—to put it another way—when ample engine power is supplied it should be stored in a pliant framework; the frame or coverings should be

pliant so as to automatically adapt themselves when set free to the rhythmical calls made upon them, otherwise they will only work at half capacity. The first step in releasing from obstructions should be expert manipulation designed to loosen up rigid structures, joints, adherent tendons, ligaments and other structures.

There is the rôle of the orthopedic surgeon. Much, however, can and should be done, by the clinician, or by a skillful technician. Some of these needful doings will be mentioned. The topic here chiefly dwelt upon is the part the patient can himself play under expert guidance and through corrective exercises.

"The human body is," to use a favorite phrase of one of my teachers, "all one piece, and not separate or independent compartments or mechanisms." The functioning of one group of organs depends upon the co-operation of others. Hence the re-establishment of any one organ, or group of organs, aids all the others, including associated or supplemental structures. Also if it does not function properly the others will not work to capacity or comfortably.

Those organs and organ groups, contained in the chest, abdomen, trunk; are collectively speaking those of respiration, circulation, digestion, reproduction, genito-urination, are so intimately correlated mechanically that impairments in any of the group lays a ban upon each and all of the others.

We should—of course—learn all possible as to aids.

How did these faults of structure and arrangements begin? They started as slight anatomic defects and of development. Their significances are far greater than commonly appreciated. While these seem to be—in themselves—minor matters, the mechanical confusions they produce go far toward causing, or aggravating, many other disease states and effects.

As they become mitigated these added troubles yield more readily to whatever other remedies are employed. Unless mechanical limitations are removed or reduced in severity there often remains degrees and kinds of invalidism.

The essential origins began in the early evolution of the human race; as pre-man or early (dawn, "eocene") man evolved from a four-armed into a two-armed or a two-legged creature. Up till that time, man—or pre-man—went on all fours. His backbone was horizontal, as in all mammals; his insides (viscera) then hung down vertically at right angles to and along the spine. When he assumed the erect posture the backbone became perpendicular and the internal organs hung suspended, chiefly from one point in the chest, and hung down toward a central point about the middle of the hips or pelvic circumference. There they became crowded in a narrow space and fell into such mutual arrangements as gravity permitted, and as best they could.

In the course of millions of years these radical alterations in disposal of these organs, came gradually to adapt themselves, but man could not overcome in so short a time the effects caused by millions of previous genera-

tions. These conditions are there today, will be tomorrow and many tomorrows.

The race of man suffers the hurtful consequences of this "divine experiment" in changing from a quadruped to a "primate" (*homo sapiens erectus*) or head of the animal kingdom. Meanwhile man's intelligence and accumulated observations, and by his trials and errors, have enabled him to secure much relief from this situation. By the same token prompt convalescence is influenced favorably.

The main requirement is that these supporting structures shall be kept in good tone and orderliness. They must be able to move about a little; enough to encourage and secure advantageous readaptations.

Any unfortunate effects observed then are due chiefly to disarrangements among the interplays of these delicate mechanisms. They have not yet become fully compensated or adapted to the newer arrangements. The point at which these troubles can be attacked and repaired or—in some instances—cured, is through restoring the tone and full working efficiency of the structures by which the organs are supported; the direct and the associated; restoring to order the placement of the organs, and training them to keep their places and working balances.

As you well know automobile troubles will yield only when the various parts are kept in gear, in true, nicely adapted the one to the other. Why not your own body? These fundamental facts may be known, and even appreciated, but unless they come into consideration by physicians or by intelligent invalids, and are *acted upon*, the going and getting there will not be so good.

The most effective remedies are specially designed *primitive* movements. The first thing is to remove the restraints on movement; and next to tone up the weakened supports.

The way to go about the task of completed convalescence is through performing *somehow*, in the day's or week's work, enough primitive movements required to keep the parts concerned in good order. Moreover when the great organs have suffered disorders and diseases, the one most promising means of cure is by restoring developmental harmony.

You can carry on this campaign by means of active outdoor games, sports or suitable occupations. If you *think* you can't spare the time or costs you can get much the same benefits in your own bed room by doing, what Arnold Bennett scornfully calls: "pre-breakfast stunts." The time consumed is about five minutes a day. They are well worth your while as permanent improvements. You can thus recover not only a delightful sense of invigoration, but also a return of original comeliness, shapeliness and gracefulness; also a defense against invalidism, peevishness and can elude the ravages of time.

The parts concerned consist of framework and working muscles; especially the paired or rights and lefts; front and rear. Some are pushers (extensors), and some pullers (flexors); also the turners (rotators). When in good condition they just about balance each other. The front ones mostly pull down, or together; the rear ones mostly push backward and apart—as when one looks upward and thrusts out the arms or the legs.

What is your rating in these capabilities?

Self Testings; Try-Outs

The object in this connection is to relearn how you used your machinery while in childhood, adolescence, in your "plastic prime." When you regain full action you are then in command of your body machinery and can take up any of the more active and popular games and

play them well. The first thing to do is to test out your joints and power to push, pull or turn; your strength, reach, scope or range of movement.

Lie on your bed, or better the floor, and go through the round of natural movements. Where you come against some limitations, push or pull or turn through till you command your instrumentalities. Do this slowly and with increasing force from start of movement to finish; from poise to utmost. Also while on your back try to raise your body resting on head and buttocks, like a bridge or bow. Later rest on head and heels—to test strength of your back.

Then lie face downward; rest on hands and raise the head backward till you can "look at the ceiling." Put it down and raise again, turn face far toward one shoulder. Put it down and raise again and turn to other shoulder. Repeat this several times. Then sit up—knees open—heels touching. Clasp hands on back of head and bend, trying to touch one elbow to the space between knees. Raise head and repeat elbow touching several times.

This tests the flexibility of your back, neck and shoulders. Repeat this daily till you can readily touch. Do this daily two or more times. Add to this later a far backward bending of the head against the pressure of your clasped hands.

Then sit in a chair (without arms) facing the back—like riding a horse. Clasp hands on top of the head, grip the chair with the knees (so as to fix the hips and buttocks). Then turn the upper part of the body as far round to the left as possible. Hold that point for two seconds. Then turn to the right and hold at full tension, two seconds. Note that the only place the backbone can rotate is at the waist line and neck. It is most important that it shall turn and completely, once in so often, or all the organs innervated from these outlets (neuromeres) will suffer.

Primitive Movements Suitable as Basis for Overcoming Most Mechanical Hindrances to Functional Balance; Especially Suitable for Improving Structures of the Chest, Trunk and Pelvis

The chief law for training movements is to start all acts from the resting phase—poise—and gradually increase to full tension; then let go. This instant of "let go" is the occasion of energy renewal. It also enables the muscle to make a complete *change of direction*, unhindered by contraction for any next movement, also with exact aim. Note: avoid mixing push and pull in the same act. To do so confuses aim and effectiveness over tension.

For any one who is deficient in strength; or whose heart tone is below par, the movements can be done in safety and advantage while lying on the back and alternately thrusting out the legs. Then after mastering these, lie on one side and do the scissors movement; front and rear on the horizontal plane several times, then shift to the other side and repeat.

A very valuable means of accomplishing many desirable effects is this: lie on the back; clasp hands over the top of head; pull chest far up; at the same time *inhale*. Then kick out in the air one leg and then the other. *Exhale* slowly as possible while kicking out, till you blow out the air; then rest and repeat. These motions are of special value in strengthening the abdominal walls, both the front and the rear ones.

Or kneel in front of some solid object—like the side of a bath tub—grasp it and repeat neck and head stretchings and turnings. Then while holding on to this, or other fixed object, stoop and rise; squat on your heels and rise to tip toe several times, till the hip joints move

freely. A good object to hold to is an open door; clasp one handle one side and the other on the other side. Stoop and rise, also thrust out one leg front, then back, then far to right and the other leg front, then back and far to left—alternating. At same time thrust head back and to each side.

The center of the whole man resides somewhere in the middle of the head. From this point all lines of pull down depend. Hence all effort—conscious and unconscious—should be to pull *upward* and thus form posture balance. Since the tendency of every one—when tired or weak—is to slump, you can, and ought to, *consciously* pull the head upward to meet and overcome this tendency to inequality and avoid any resulting deformation. Keep this up till habit paths are formed; then you become automatically erect.

Hence include, in these few main corrective movements, the forceful pulling up of the head center. This is best done by some such movement as "the mantel-piece exercise." Stand facing a mantelpiece or top of a chiffonier; cross the forearms, rest elbows and forearms on top, and make pulling movements with the arms as though you would lift your body till the legs bear only half your weight. At the same time forcefully *pull your shoulders down*. Also while doing this turn forcefully the head backward while pulling; first all one way then to the center and all the other way. This can be combined advantageously with a knee bending movement.

As said the only place the backbone can turn or twist is at the neck and the waist line. The neck can rotate fully half round—make yours do it. If it seems incomplete thrust it around with force. Try to make it creak. Then you know you have overcome some morbid obstruction. So will other joints creak in very stiff rigid bodies.

The "all fours" movement: bear in mind that man evolved as a race along much the same lines as a child grows. First crawling—that is, walking on all fours—then walking on two feet. The "all four" movement is the best combination I have found to reduce big bellies and obesity generally. Get down on hands and knees; rest the hands—extending all fingers is best—thrust one leg far back then sway up and down to loosen the hip joints. Then thrust other leg back, and repeat. One can learn to *jump* back and forth. Once many years ago all efforts to reduce a waist line of 54 inches had failed till the "all four" motion was used; then in three months it came down to 45 inches.

Desk stretchings: a similar effect is through standing in front of a desk. Put one foot up and bend forcefully forward three times; farther each time—hard, harder, hardest. Shift and bend the other leg; till the thigh bones each time become "end for end." Also pull in the belly walls in same time. This is very valuable for displacements of the female organs, and the best thing for rigid prostate glands in men.

While these movements are the ones I have come to rely on and teach to patients who cooperate with me, there are plenty of similar ones. They can be varied as one may devise. They should include the same fundamentals in order to get sure results. One principle should always guide: uplift of the arms, and backward bending of head and turnings, first to one side and then to the other.

For example: in playing golf practice movements ("phantom or shadow golf"). (See chapter on: "Play.") It is urged to make the strokes equally from right to left, then from left to right, those made on the horizontal line, keeping the hips steady while turning the body at waist line. It is desirable to do chiefly up lifts, carrying up and over each shoulder. This I call "the pitch fork" movement. It tends to make one more erect by

training the pull back and pull down muscles. Similar movements can be made with a cudgel or heavy cane used as in sword play; first with one hand then with the other. These call for free action of the shoulders. So much for use by those who are quite vigorous.

A very efficacious preliminary movement and for a weakened person to continue, is to lie or sit, or later stand and *pump* the intestines. That is, touch with your finger one place of the abdominal circle and *push* that well out gently; then *pull forcefully in and up*. Then touch another and push and pull again. Repetitions of these in and out thrusts and withdrawals *give powerful pumping of blood*, body juices, intestinal contents, and renders powerful the abdominal supports. The front and *also the back*.

To cure hernias: lie on back; feet twenty inches apart. Raise the head two inches from pillow; thrust both arms to one side—with increasing force; then bring both hands back to the chest. Then thrust both hands far out to the other side. Repeat five or six times. Rest. These transverse thrustings demand effort of the *slanting* waist line muscles. They tighten the rotators; close up the openings till the sides grow together and keep the intestines in, no matter what you do. See article on: "Hernia.")

To cure a sore finger: Whirling the arms—wheel fashion—is an efficient means of increasing local circulation and repair of sore or infected or gouty or rheumatic fingers or joints (when not too far gone in pus formation). Whirl the arm rapidly till the blood is driven to the finger tips and they become bright red. This takes from seven to fifteen times. Then hold the hand aloft till the fingers become almost white. Do this two or three or more times a day till the condition subsides.

This crowds the white cells to the affected part. These phagocytes eat up the sick or dead cells, which if left alone would form an abscess. This very simple device has proved for me and others excellent means of achieving what is often needed and in a way nothing else does so well. It is of special value because the patient can do this at any time or place. Better thrice daily.

The best way to begin the day, or to end a nap, is after waking to cultivate the practice of some moments of stretching, twisting the body, limbs and neck far back and to each side; yawning, deep breathing, till a feeling of pleasurable relief and alertness comes. Repeat this till quite awake. Not till then get up.

These stretchings are the equivalent of an hour or two of extra sleep. The body machinery thus starts gradually as it should. They also give delightful sensations of easement. Abrupt springing out of bed or from recumbency is a physiologic sin; shocks the heart and—when it is weak—may do much harm.

Another exercise which has served me well: create a *wish* and *resolve* to reduce the waist line till it is about two or three inches less than the chest line. The most efficacious means is to *form the habit* of—at any time or place—standing or sitting, forcefully pulling the belly *inward* and *upward*; hold a second or two, then let it out—don't push out. Repeat five or ten times; many times a day.

Deep Breathing and Straight Thinking

Brain power and lung capacity stand in close interrelationships. As we grow older our ribs become less flexible and capacious. We should *consciously* expand our chest daily till it becomes, as nearly as possible, what we were in our prime.

The movements described above all tend to amplify the chest. In the act of breathing as a form of training, expend the force outwardly by compressing the

lower ribs—exhaling—till all the tidal and some residual air is extruded. To refill—inhalation—is then with greater ease. As a rule whenever deliberate single movements are being performed, combine with them forceful exhalation. As while flexing or in extending an arm or a leg, breathe in rhythm and cadence with them. In particular do the breathings while pulling the belly inward and upward.

None of the corrective and restorative movements surpass in efficacy these respiratory gymnastics. If you are so busy or so lazy any day as to do no more, at least stand for a few minutes before an open window, with few or no garments on, and breathe a few times in rhythm also with arm movements; turning and thrusting out the fingers forcefully extended.

Of these exercises some do require mild exertion, hence many prefer the pill or potion or operation, wholly useless here. Most invalids—and well people too—revolt at *earning health*. They prefer to sit tight till the angel comes and: "troubles the waters."

Rights and Lefts; To and Fro; Push and Pull; Twist or Bend; Rebalancing of the Body Load Hence Expedite Power Renewals

We all tend to overwork certain muscle groups on one side, and in one direction, and under-work those of the corresponding group. In order to "preserve our best physical estate," our mobile equilibrium, we must be sure to cultivate variability, pliability and adaptability. A tremendous defense and repair power is thus constituted as yet unappreciated.

For example: you can doubtless recall many instances when you have been doing some severe or active play, making protracted movements in one or other direction, also note the marked relief and improvement in your results, by simply doing similar movements in the opposite direction.

When these monotonous stresses and over-stresses are endured day by day and year after year, the ill effects accumulate and one becomes crippled. A most valuable lesson being taught everywhere is that one must have a change of air, of scene and form of occupation or circumstance, at least once a year.

Let me recall your attention here to the almost unbelievable benefits which follow relief from tiresome repetitions of the same movements. They weary mind as well as body; they retard or hinder recovery, of all-round vigor, sprightliness, proficiency.

Take golf, for example, in playing on the links the strokes are made in one direction only. Thus the parts concerned become "set" that way. This may not impair the game but hinders full benefits for the player. Try—in golf for instance—practicing strokes in the opposite direction and you will find the balanced action thus supplied will not only help your physique but—in the case of older players—will amplify skillful use of the body as a whole.

The Battle of the Waist Line

A persistently expanding abdominal circumference betrays deteriorative changes. This form of obstruction is one which saps life forces more than is usually realized. Other things being equal the longer the belt line the shorter the life line. Moreover life expansion is expedited by waist line contraction.

An over large and pendulous belly is the resultant of many abnormalities. By no means is it merely "a fair round paunch with fat capon lined." That state of exuberance is, in a sense, a plain index of digestive vigor out-running commendable restraints; also a sedulous

avoidance of the admonition to work out one's salvation by the sweat of one's brow.

A massive and heavy abdomen exerts a hurtful drag on the delicate interior structures and tends to disarrange many vital functions. An atrociously big belly indicates a dilated, an over stretched condition of the abdominal organs, the spherical and the tubular. Also a giving way of the supports, inside and outside. Relaxation of these encourages extra effort by the two reciprocating pumps: the heart and the lungs.

The blood pressure must rise to meet the demands of blood resistance and obstructed distribution. This indicates a perilous overload. Excessively burdened blood tubes and heart pump lead to weakening of those structures, to a loss of propulsion balance and the deposition of calcium salts, hence brittleness, hence apoplexy.

Such abdominal structures become periodically overweighted by fluids, causing the drag mentioned. When to this is super-added large deposits of fat, both inside the belly walls (omental) and outside (extra abdominal) the drag is enormous. Something must give way, and postural tone fades first. Irregularities in hydraulic rhythms follow; also visceral discordances. The result of overload is also a crushing weight on the feet and ankles; a common effect is foot arch crippling.

While a heightened blood pressure is no longer regarded as a disease, it is a grave peril which can often, indeed usually, be escaped. It evidences loss of balance in the hydro-pneumatic mechanisms. The defense instruments and energies are thus subjected to a severe tax, especially the blood making, the cleaning (oxygenation) and distributing, and the eliminating organs.

Reduction of redundant weight is a rational measure which contributes largely to the lifting away of other burdens. Hence the aim should ever be to secure a mobile equilibrium in all the fluid carrying mechanisms.

Big muscles, inadequately used, and too liberally fed, may maintain for a long length of time good tone or balance. We see a few such polysarks surviving to great age and in good vigor and usefulness. Likewise we see a rare few who—despite injudicious habits—long outlive the life insurance or "actuarial" tables.

The fact is established that it is far safer to be much below than above the average weight. By the same token under feeding in essential chemicals brings about serious consequences as in times of war and also when fashion insists on weight restrictions. The true index of long survival is a sound heredity and structures, in short a constitutional superiority.

The diseases which kill are chiefly man made.

Whatever you may decide for others as to *birth control*, for yourself practice *girth control*. If you doubt this, and are of prodigal proportions, apply for life insurance and you will be rudely undeceived. Many cogent reasons exist for reducing the waist line to due proportions with the chest line. This should be two or three inches greater for the chest, the basket in which the heart and lungs lie.

Pleasing proportions are of twice the aesthetic values—in the total of handsomeness—to coloring, or hair, or eyes, or nose, or teeth, or facial expression. For any person rightly conscious of their duty to their own self it is always an obligation to retain proportions, as far as practicable. Likewise it makes for a commendable vanity. There is thereby connoted vigor, endurance, and capability for maintaining one's rightful place in the good looks procession.

The popular notion that a fat man is a jolly, cheery, care free, man, is true only in part. Some are, but only when the plumpness is a plain indication of power—

(Concluded on page 349)

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After Prohibition

It behooves medicine to give thought to the situation that will confront society after the repeal of the Eighteenth Amendment, or after it takes its place definitely in the category of unenforced amendments.

What kind of a constructive program will medicine be able to offer? In the following paragraphs we venture to offer one for consideration.

The United States Public Health Service is charged by statute, under the Constitution, with the duty of "public health education and dissemination of health information." The organization's personnel consist of medical scientists of the highest type, thoroughly trained and experienced in all matters relating to the public health, and in active alliance with substantially all of the health and educational agencies in the country.

Adequate and authoritative temperance education, which is, indisputably, legitimate health propaganda, merely awaits governmental appropriations greatly in excess of present meager allotments to enable the United States Health Service officially

1. To make known to every person in the country, by means of demonstrations, motion-pictures, bulletins, posters, leaflets, pamphlets, circulars, the press, the radio, lectures, pageants, plays and all other available agencies, the elementary facts regarding temperance in its relation to hygiene, and so to create sound personal and community habits and arouse widespread interest in

co-operative health promotion on this fundamental basis.

2. To develop a keen appreciation on the part of everyone of how temperance prevents a vast amount of mental and physical sickness and disability and greatly reduces the number of deaths.

3. To show the relationship of temperance propaganda to other efforts, such as those undertaken to provide for recreation and physical education, for the prevention and relief of poverty and destitution, for the abatement of crime, and for the amelioration of other deplorable conditions of life.

The initiation of such a regime of temperance would abate the evils which the twin excesses, prohibition and alcoholism, will leave in their wake.

The country would ultimately attain a status with respect to alcoholism much like that which we have developed with respect to slavery. We do not now require the intensive application of an act to enforce the Thirteenth Amendment prohibiting involuntary servitude. We shall also reach a point where a Volstead Act would be similarly inconceivable.

So we must invoke a social mechanism in which every one of the citizens of the country has the utmost confidence, as against bureaus of the present dispensation, meriting neither respect nor esteem.

Here, then, is a means of social cleansing whereby may be "mopped up" the aftermath of our now prevalent evils and abuses under prohibition, to wit: disrespect for law, obstruction of the due administration of justice, expenditure for high-priced beverages on an unprecedented scale, corruption of public officials, abuse of legal process, resort by the government to improper and illegal acts in the procurement of evidence, infringement of such constitutional guarantees as immunity from double jeopardy and illegal search and seizure, and gross alcoholization of social groups hitherto relatively sober.

As compared with the United States Public Health Service's educational section, the government bureaus caring for the physical welfare of cattle, sheep, pigs and horses and for the enforcement of prohibition are heavily financed. A humane hygiene must be strictly enforced in the case of the dumb creation, but prohibition enforcement postulates a people upon exactly the same level as the country's cattle. We suggest a diversion of funds more indicative of respect for a great people and more certain to produce beneficent results.

Slavery is past, and war may be passing; at any rate, agitation for the renunciation of war, culminating in the Kellogg Peace Pact and the Hoover-MacDonald conference, has not inspired the charge of treason against its sponsors. Until the signing of the Pact our commitment to war as an indispensable recourse in various circumstances may be said to have been as integral a part of our governmental policy—and even of law, in one form or another—as is prohibition. So should prohibition also pass, and temperance be promulgated as an educational duty in an age just beginning consciously to direct its evolutionary emergence out of the depths. The possibility of a new culture seems imminent, promising to abate preposterous and noisome conditions.

Let us, then, prepare to meet, adequately, the imperative need and demand that will yet arise for an intelligent grappling, as befits a civilized nation, with this deplorable problem, to the end that the goal of a temperate way of life may be achieved, and to the further end that grotesque and antisocial types of behaviorism, clumsily imposed upon the nation as we know it now, and vying with alcoholism itself in their horrors, shall cease to plague our people and to justify the doubts of the other nations of the world.

Mouth Breathing

The removal of adenoids and tonsils does not necessarily obviate mouth breathing. As often as not the habit persists. The writer believes that a mighty factor in initiating and perpetuating the habit is repeated colds in the head. This is probably the chief factor in children ordinarily unobstructed by nasal or faucial pathology. Even where there is partial obstruction mouth breathing might not supervene if colds did not convert partial into complete obstruction for certain periods of time. If a cold compels a child to breathe through his mouth for a week the habit is established.

Is there anything we can do to obviate this danger to a measurable extent? The use of ephedrine in oil without the addition of irritating substances like menthol, thymol, camphor, eucalyptol, etc., during and particularly *after colds*, is effective.

None of the mechanical devices to keep the mouth shut during sleep are of any value. They favor retraction of the mandible, with all of its orthodontic consequences.

After adenoid and tonsil operations such use of ephedrine makes the establishment of normal breathing a more likely sequence.

Of course, the prevention of colds—bright dream of the future—is the great desideratum.

Food for Thought

Writing in the *Bulletin* of the Medical Society of the County of Kings, Dr. Thomas M. Brennan, President of the society, submits the interesting suggestion that some of the laymen who are attacking the medical profession in various lay periodicals are persons who, thanks to the very achievements of modern preventive medicine, have never been patients and have not had the experience of intimate contact with the practitioner. If this be true, it is to be supposed that this curious breed of human beings will greatly increase in the near future, for the greatest achievements of preventive medicine still lie before us.

This is an instance in which authoritative medical education, could it be administered to these enemies in large and intensive doses, would probably not be effective. In fact, they are usually well informed upon many medical matters. The trouble is just as Dr. Brennan says—they lack personal experience.

Is there any equivalent for such experience? We can think of none.

Conceive of the periodical physical examination as having achieved its objective with respect to the prevention of a vast amount of disease; would succeeding generations of its beneficiaries realize what they had been saved from and appreciate their saviors and their saviors' science accordingly? Do people realize to-day what smallpox was like once upon a time? Is it not actually denied that its decline is to be ascribed to medical science?

What is to be the ultimate outcome on this score?

The Doctor in the Role of Goat

Dr. Malcolm L. Harris, President of the American Medical Association, points out that "high-pressure salesmanship and the craze for instalment buying have made the middle class unable to pay for medical advice." He has found that the average person of the middle class can meet the expenses of an ordinary illness without financial embarrassment, if he has not done too much instalment buying. "The middle class makes

more money now than ever before, but they have lost the desire to save. They buy radios, electric refrigerators, oil-burning furnaces, pianos and automobiles on the instalment plan. They are constantly in debt."

Dr. Harris also points out that philanthropists are creating the impression that medical service should be dispensed free to all, when they donate funds for the construction of a hospital or other medical or surgical institution, while insurance companies are regulating the rates of physicians, surgeons and hospitals.

These are facts which should set us to thinking a bit about other than purely scientific things. We are glad to note the induction of a man of penetrating economic insight into the Presidency of the American Medical Association.

Our vaunted prosperity seems to be a vain thing from one point of view. The automobile interests, for example, make no bones about declaring how many cars will be sold next year, and just what the increase is to be over previous years. This and certain other high-production industries "conspire" successfully to extract the last cent from the citizenry and then some more in the form of instalment commitments. The doctor thinks that his own automobile is a great aid in practice, but let him reflect that two factors are militating against its ultimate usefulness: one, that he himself cannot be kept properly equipped as regards cars if his patients are in debt to the automobile people; another, that our streets are becoming increasingly glutted with cars, so that the doctor is finding it more and more difficult to negotiate traffic jams and to park anywhere near his patients.

To the two automobile factors cited might possibly be added another: the increasing maimings and killings by cars strike economically at the doctor when the victims are of his clientele.

Just at present it looks very much as though the doctor were cast for the part of the goat in our social drama.

Bound to Come?

Speaking as a layman before the recent convention of the American College of Surgeons, Dr. Glenn Frank, President of the University of Wisconsin, prophesied that the country was destined to come under the control of a medicine and surgery entirely directed by the government, or under the control of the vast insurance companies and industries. He considered such an eventuality "bound to come," although he did not "like it."

If "big business" ever takes over the government *completely* the menace of State medicine would indeed loom large. And that is the chief threat of big business—its complete absorption of the machinery of government. When that day comes there will be no pretense about the relationship, as now, and no pretense as to its undemocratic character.

It behooves the doctor to keep himself well informed as to social trends. Not for the sake of his own skin but in behalf of the science and art of medicine and the best interests of the sick, for it would be a degraded profession that would live only by the favor of the industrial barons.

This thing we call State medicine means triumphant capture by big business whether or not medicine and surgery are nominally directed by the government. What proponent of State medicine is not now a creature of big business?

Dr. Frank is an exceedingly astute man; when he made a distinction in his address between "medicine

and surgery entirely directed by the government, or under the control of the vast insurance companies and industries," he must have been in a humorous frame of mind.

There is no distinction.

Miscellany

The Age of Specialization

Dr. Harry P. Mosher of Boston, President of the American Academy of Ophthalmology and Otolaryngology, gave an address at Atlantic City the other day in which he advised young men entering the medical profession to specialize, and to become better in their specialty than any other doctor in the community. This, of course, is in line with the present trend in medicine, and probably results in better medical service than would be obtainable if specialists were few.

Yet it does result too, for many of us, in a curious condition. Twenty years ago there was hardly a citizen who did not have a family doctor. But now, although there are undoubtedly plenty of good family doctors left, there are many citizens who admit that if they were suddenly confronted with an emergency in their homes they wouldn't have the faintest notion where to telephone to get a doctor in a hurry. Inevitably they know a good stomach man, or a good eye, ear and throat man, or a good man in children's diseases; but the very conditions which have sent them to the offices of these various specialists have made them get out of touch, somehow, with their general practitioner.

... He exists all right. All authorities agree on that. But many an average citizen has lost track of him. And many an average citizen is so ashamed of himself for having lost track of him that he wouldn't call him up even if he knew his number.

Possibly there is a job for the American Medical Association here in the re-establishment of liaison.—*Evening World*.

Farmers' Diet Short On Vegetables

Strange as it may seem, farmers eat fewer vegetables than urbanites. This, at least, was the case in Cattaraugus County, New York, where the subject of diet and nutrition was carefully studied. One hundred families, representing 479 people, made weekly reports of their food consumption for a year and the surprising fact that rural people eat fewer green vegetables than do city and village inhabitants was revealed.

Servants of Health

Ten thousand private physicians of Greater New York are uniting for an intensive campaign to educate the public to keep its health. They are living proof of the statement made some years ago by Dr. Harvey Cushing: "It has been a seeming paradox that the medical profession has so consistently endeavored to make of the world a place where there is a constantly lessening need for the medical man." Doctors still find plenty of disease to give them battle, but the world and the doctors with it are feeling the effects of their efforts. Standards of public health are raised each year as one by one the ailments of suffering mankind are conquered. Physicians are proud to become servants of public health rather than prescribers for individual ills.

The five County Medical Societies of Greater New

York are creating a precedent with their drive. Such campaigns have heretofore been conducted by government or institutional bodies. The doctors are going to let people know, through the radio, the press and moving pictures that they regard themselves as guardians against disease. They want people to realize the importance of preventive measures in maintaining health.

A new relationship between doctors and patients is emphasized by the societies' action. Dr. Galdston has pointed out that advertising and publicity for physicians are to be approved in this form. They are not individually announcing their readiness to cure the ills of prospective patients, for that sort of advertising is still against professional ethics. The whole body of physicians advertises, not for purposes of increasing personal wealth or reputation, but in the interest of public health. That is their motive in urging regular health examinations. They hope not only to check incipient disease but also to teach the value of proper living in promoting better health. They want people to acquire the habit of frequent consultation when they are well, so that they may keep well.

November is a good month for such a campaign. Every effort will be made to persuade people to get themselves in good shape for the Winter before bitter weather sets in. Just now sudden changes of temperature, rainy weather, the experimental heating of homes and the unexpected arrival of balmy days after a sharp frost are hard on the human frame. Colds are common at this time of year. The public is in a receptive mood toward information on how to get well and keep well. Every one will wish the doctors success in their new work as wardens of health.—*New York Times*.

Convalescent Care as a Fine Art with Special Reference to the Needs of the Client

(Continued from page 346)

ful, smoothly performing functions and muscles, in one whose appetite and digestion leads him to over eat and under exercise, and to "accumulate grease."

A large proportion of obese, paunchy, stodgy folk suffer from nerve tire, from chronic energy depletion, hence peculiarly vulnerable to various diseases of which diabetes is one of the most common and most serious. The effects of stagnation are to strew the vital pathways with obstacles which must be kept cleared, otherwise disasters ensue.

You will note that most fat folk have foot arch troubles. This is due, more or less, to the crushing burden of a load too great for any but a full normal to sustain. Thereupon when any concurrent ailment arises undermining energies, the foot arches, the delicate springs for foot and leg action become atrociously over stretched. An all-over fatigue arises, and then immense amounts of life energies are squandered.

It is well known that such constant drains on energies make one "nervous," peevish, grumpy. Then there is also some slight pain, a dull ache, all the time, while that one is standing, quite enough to spoil the sweetest disposition.

Recommendations:

Would you have me instruct you briefly how to triumph over weightedness?

This task is no skirmish. It is a long campaign which should be shrewdly planned in accord with many factors of conformation, courage, and faithfulness in "good works." Radical changes in life habits are demanded.

(See Essay on Foot Troubles as Causes for Widely Disseminated Pains and Personality Disorders.)

1504 Pine Street.

The Physician's Library

Minor Surgery. By Frederick Christopher, M.D., F.A.C.S., Associate in Surgery at Northwestern University Medical School, etc. Illustrated. Philadelphia and London, W. B. Saunders Company, 1929. Pp. 694.

This is an excellent guide for interns and younger practitioners who have fed mainly upon the strong meat of the schools and hospitals, to the neglect of minor matters, and who want to know how the surgical treatment of the less serious, every-day ailments and injuries has been affected by recent developments of medical science. Those engaged in industrial surgery or likely to be called upon for first-aid services of various sorts will also find the book most useful. The work is compact, eminently practical, clearly written, well illustrated, imbued with the author's personality, and replete with the kind of details that one needs in such matters, for example, as the injection treatment of varicose veins. The concluding chapter of forty-eight pages is devoted to the surgical intern—a most valuable feature for that worthy. "There is no greater field for good surgery than is presented by minor surgery." This book, if followed, will obviate much major surgery.

Medical Leaders: From Hippocrates to Osler. By Samuel W. Lambert, M.D., and George M. Goodwin, M.D. Illustrated. Indianapolis, the Bobbs-Merrill Company, 1929. Pp. 331. Price \$5.00.

This is an interesting presentation of the most outstanding medical personalities throughout the past 3,500 years. It is written in a simple, straightforward style, being obviously intended for the general reader. Believing that "the education of the crowd is still most incomplete," the authors administer first aid in the shape of that most palatable form of medical history—romantic personalities. Publications of this character seem to be steadily increasing in number, which is an encouraging phenomenon, since better knowledge on the part of the public of medical origins, medical aims and medical triumphs should serve to correct prevailing misunderstandings.

Diseases of the Blood. By Paul W. Clough, M.D., Associate in Clinical Medicine Johns Hopkins University, New York and London, 1929. Pp. 310, including index. Price \$2.50.

This is one of the medical monographs of the Harper publishing house, a series that has included Harlow Brooks's Angina Pectoris, Sansum's Diabetes Mellitus and Dennie's Syphilis, and which promises more volumes of equal import for the practitioner. It is a practical and comprehensive work on the blood that will go far to make more familiar a domain that the up-to-date physician is nowadays obliged to tread frequently, and with intelligence. Blood transfusion is covered and many subjects, such as the relationship of the reticulo-endothelial system to the formation and disposal of the blood corpuscles, are discussed. A good many matters hitherto of the esoteric order are interestingly cleared up. The last chapter is devoted to the technique of blood examinations.

Pettibone's Textbook of Physiological Chemistry, with Experiments. Revised and rewritten by J. F. McClendon, Ph.D., Professor of Physiological Chemistry, Medical School, University of Minnesota, Minneapolis. St. Louis, The C. V. Mosby Company, 1929. Pp. 368, including a general and a special index. Price \$3.75.

This is the fourth edition of a well known textbook which is the result of the work done at the University of Minnesota by half a dozen men. Part I deals with the facts and principles of biochemistry. Part II covers a wide range of laboratory experimentation. The important biochemical compounds and the fundamental processes which go on in the animal body are thoroughly discussed. An appendix gives directions for making up quantitative and special reagents, and there is a five-page section which lists, under appropriate classifications, the bibliographic references in this field. In addition to a general index there is a separate index for laboratory work. Our knowledge of biological chemistry is brought up-to-date in this edition. The medicine of to-day is based so definitely upon physiological chemistry that such an excellent textbook as this one takes naturally a high place in professional esteem.

Tularemia. By Walter Simpson, M. D. Paul B. Hoeber, Inc., New York, 1929. Pp. 162. Price, \$5.00.

This beautifully printed volume covers the histology, pathology, diagnosis and treatment of tularemia in a very thorough manner. There are 53 text illustrations and two colored plates. There is a complete bibliography. Dr. Simpson has added a valuable contribution to medical literature.

The Science of Nutrition Simplified. By D. D. Rosewarne, M.R.C.S. (Eng.), L.R.C.P. (Lond.), etc. Illustrated. St. Louis, The C. V. Mosby Company, 1929. Pp. 314, including index.

This is a popular introduction to dietetics which succeeds very well in its aim of explaining modern principles of nutrition to the ordinary reader. The author assumes that the reader knows little or nothing of chemistry and physiology and the first three chapters of the book give a condensed statement of all the chemical and physiological considerations the latter will require for a clear understanding of the subject. Since most people are uninformed or misinformed on dietetics, and since the profession's knowledge of the principles of nutrition, at the present time, is singularly complete and accurate, such a simply written book as this should serve a good purpose. Part I consists of Preliminary Considerations, Part II of the Food Requirements of the Organism, Part III of Food Substances, and Part IV of Dieting. No particular dietetic system is exploited, no specialized food preparation is mentioned, and the reader is left to apply personally the principles set forth.

Modern Methods of Treatment. By Logan Clendening, M.D., Professor of Clinical Medicine and Lecturer on Therapeutics, Medical Department of the University of Kansas, etc. Third edition. Illustrated. St. Louis, The C. V. Mosby Company, 1929. Pp. 815, including index. Price \$10.

The third edition of this comprehensive work by the distinguished author of "The Human Body" leaves nothing to be desired. Hydrotherapy, psychotherapy, dietetics, drugs, transfusions, exercise, non-specific protein therapy—all are here. The book is aimed at the general practitioner, not at those whom "the world has unfortunately come to call specialists." Of course, having been written by Clendening, the style is saucy—and therefore highly effective. For example, in writing of autocondensation with the D'Arsonval apparatus in the treatment of diabetes, Clendening remarks that the accounts of its use in that disease "appear to be written entirely by persons who, whatever they know about electricity, know nothing at all about diabetes." Each therapeutic procedure is so described as to be easily applied by the novice. Practical to the nth degree. Lists of references follow each chapter, should the reader desire to pursue the subjects further. Seven collaborators write special chapters. There are ninety-five illustrations which admirably supplement the text. One of the medical classics, like Gray's Anatomy.

Diseases of the Stomach. By Max Einhorn, M. D. Wm. Wood and Co., N. Y., 1929. 7th revised edition. Pp. 593. Price, \$6.00.

A new edition of this well known text book; an exhaustive study of the subject. Dr. Einhorn's tests are given in detail as well as other modern procedures. This is a valuable work and will be used to splendid advantage in every-day practice.

Applied Electrocardiography. By Parsonnet and Hyman. The Macmillan Co., New York, 1929. Pp. 206. Price, \$4.00.

A clinical presentation for the practitioner, to acquaint him with the proper interpretation of electrocardiograms. The book does not deal much with technic but with the clinical use of electrocardiography, although chapter two takes up the technic to a certain extent. The book is well written and makes this difficult subject understandable.

Relation Between Endocrine Glands and Heredosyphilis in Mental Disturbances in Children

(Revue Française d'Endocrinologie, Paris, February, 1929). In the examination of 111 children suffering with various mental disturbances, Drouet and Hanel found hereditary syphilis in 108 (97.3 per cent.) and some kind of cranial, dental, facial, ocular or other dystrophy in ninety-five. Pharmacologic tests of the vegetative nervous system revealed various monoglandular or pluriglandular disturbances of the endocrine glands in ninety-one of the ninety-two children. Therefore the authors come to the conclusion that there exists a close relationship between hereditary syphilis, the endocrine glands and mental disturbances.—*Journal A. M. A.*

Acute Anterior Poliomyelitis

I would, therefore, plead that the orthopaedic surgeon should be allowed to treat the patients, wherever they may be, in fever hospital or elsewhere, from the moment of the onset of the disease, thereby following out, to the minutest detail, the teaching of Sir Robert Jones that the affected muscles should have immediate complete and absolute rest in the orthodox positions necessary for optimum utility after the acute stage has passed.—B. Whitchurch Howell, *The Lancet*, Aug. 17, 1929.

